

35/8

H I S T O R Y
O F
F U N G U S S E S,

GROWING ABOUT
H A L I F A X.

W I T H
FORTY-SIX COPPER-PLATES;
ON WHICH ARE ENGRAVED
SIXTY-FOUR SPECIES of FUNGUSSES,

Including the Seven following GENERA, viz.

CLATHRUS,
HALVELLA,
PEZIZA,
CLAVARIA,

LYCOPERDON,
SPHÆRIA,
AND
MUCOR.

Wherein their various Appearances in the different Stages of Growth, are faithfully exhibited in about

THREE HUNDRED FIGURES,

Copied with great Care from the PLANTS, when newly gathered and in a State of Perfection.

With a particular DESCRIPTION of each SPECIES, in all its Stages,

From the first Appearance to the utter Decay of the Plant; with the Time when they were gathered; the Soil
and Situation in which they grew; their Duration; and the particular Places
mentioned, where all the New or Rare Species were found.

The Whole being a plain Recital of FACTS, the Result of more than Twenty Years Observation.

IN THREE VOLUMES.

By J A M E S B O L T O N,

Member of the Nat. Hist. Society, at EDINBURGH,

V O L. III.

N A T U R A S E M P E R E A D E M

HUDDERSFIELD:

PRINTED BY J. BROOK, FOR THE AUTHOR, AT STANNARY, NEAR HALIFAX.

M,DCC,LXXXIX.



I N T R O D U C T I O N

C O N T I N U E D.

SINCE the publication of the First Part of this Introduction, I find that the plant there mentioned under the name of *Halvella inflata*, is figured by SCHÆFFER, and named *Halvella Clavaria*; it is figured in his work, plate 249. The figures seem to have been taken from dried specimens.

It is also figured in the *Flora Danica*, t. 648. This figure was taken from a fresh plant, but the inflation of the pileus is not clearly exhibited: He has well expressed the ejection of the seeds from its surface, in a section or two at the bottom of the plate.

The plant which I have named *Boletus rengiferinus*, and figured on my 138 plate, I take to be the same, under a different appearance, which is figured in the *Flora Danica*, t. 405, and is supposed by the author to be the *Fucus digitatus alveriorum* of LOESELL; but his figure seems to have been taken, when the plant was in a state less mature than the specimen from which I took mine.

My *Sphæria agariciformia* is also figured in the *Flora Danica*, and is thus described: "*Fungus difficultor ad ullum notorum generum referendus, stipite ex albo livescente suberoso sesquipolicari, pileo glandis farina fusca cute subcarnea papillosa poris cellulorum carnis, mucellagine seu gelatina reptetorum.*" It is figured on plate 540, but the plant was small, and its very singular root not at all attended to. In the specimens which I have seen of this rare plant, the *Pilei* have frequently been twin, or double on the same stem.

The curious Phænomenon of Elasticity, in the seed-bearing filaments in many plants of this order, as well as of the *Filices*, is truly worthy of admiration; it is visible to the naked eye in many of the larger species, and by the use of glasses, in the most minute.—Mr. EDWARD ROBSON, an ingenious Botanist, of *Darlington*, in the bishopric of *Durham*, has lately communicated to me an observation, made by him, upon the Scarlet Clathrus, which may serve to illustrate this curious operation of Nature: what he has written I will transcribe in his own words.

" I have enclosed a specimen of a wonderful little plant. The stalk
 " is about a line in length, bearing at the top a round head, about the
 " size of a rape seed, at the first very tender, and contains a liquor like
 " milk; from that they turn to a beautiful orange colour, and after that
 " to an olive. When mature, and fit for examination, I looked at a
 " great many of them through the explacator; and some amongst them
 " were just opening at the top: One of these I laid on the talck in the
 " slider, and viewed it through the silver speculum. At the first I was
 " much surprised, to see a part of the fibres, that had got through the
 " rupture, moving like the legs of a fly when laid on its back. I then
 " burst it with the point of a pin, and was surprised still more, when I
 " saw it had the appearance of a little bundle of worms entangled toge-
 " ther, or fibres all alive. I next took the little bundle of fibres quite
 " out, and the animal motion was then so exceeding strong, as to turn
 " it half round, first one way and then another, and two or three times
 " it got out of the focus. Almost every fibre had a different motion;
 " some

“ some of them twined one round another, and then untwined again,
“ while others were bending, extending, coiling, waving, &c. The
“ fibres had many little balls adhering to their sides, which I take to be
“ the seeds: I observed many of these were disengaged at every motion
“ of the fibres. I distinguished many of the fibres, and they appeared
“ under the lens as thick as a horse hair, and were all exactly of the
“ same length, which was to my apprehension about two inches; they
“ were smallest at each end, which, together with their vermicular
“ motion, gave them the strongest resemblance of little live worms.—
“ I examined many of them, at various times, and always found the
“ motion precisely the same; but strongest when recent, and on the first
“ bursting. The seeds appeared like gunpowder finely granulated.”

The same Phenomenon obtains in all the Ferns; but most beautifully and manifestly in the first genus, the *Equiseti*. There are many other plants which eject their seeds, as the *Cardamine impatiens*, *Impatiens noli-metangere*, &c. &c. but in these the operation is performed by a differently constructed spring.

I have throughout this work been as cautious as possible in giving references to Authors; from a conviction, that false references cause the greatest confusion; they tend only to *distract*, not to *inform*: And whoever undertakes to trace them, in regard to the plants of this order, as they are given by the *Floristæ*, will feel the truth of what I here assert.

In many instances, where I found the plant under review agreeing, in several particulars, with the figure or description of some approved Author, and yet differing in any one essential mark or character, I have not chose to apply the name or *synonym* of that author, but rather to give a name of my own, though but a temporary one; which the future observations of me, or of my friends, may finally establish or reject. For the above reason I forbear, at present, the publication of an *Index Synonymorum* to the whole work; which, though but in an imperfect

fect state, has cost much time and application, and which will accompany this work, when the remaining part of the Appendix is compleated. For there are yet many subjects in my possession, which I do not think fit yet to publish, because I have not seen them in all their different stages and appearances; but shall omit no opportunity of observing them, till I attain a more perfect investigation.

Agarics, Boletusses, and such other *Fungi* as grow on the ground, are to be sought for in soils consisting chiefly of vegetable mould, particularly in low, moist, and shady woods, in meadows and pasture grounds, under hedges, and about old wood yards.—In gravelly or clay soils, of whatever aspect or situation, few species are to be found; and I never saw them grow plentifully in *calcareous* soils.

The *parasitic Fungi* are to be found in low and moist situations, near brooks or rivulets, on pieces of broken trees in a state of decay. The species of woods on which the seeds of these plants more freely vegetate, are Hasle, Birch, Alder, Elder, Maple, Elm, Poplar, the various species of Sallow, Pear Tree, Cherry Tree, and Fruit Trees in general.—Descriptions, with accurate figures, of which, as well as all other British Trees, may be seen in *Evelyn's Sylva*, with notes and improvements, by Dr. HUNTER, M.D. F.R.S. printed in 4to, at York, 1776. A work which should be carefully perused by all those who deal in Timber, and by every Gentleman and Landholder, who has the Prosperity of his Plantations at heart.

In regard to the Authors who have written on Fungusses, and illustrated their works with figures, the first of any note, which I have seen, is FRANCIS VAN STERBECK, who in his *Theatrum Fungorum*, first printed at *Antwerp*, in 1654, in 4to. has on thirty-two plates given about three hundred figures, with descriptions in the Dutch language: His figures are pretty good, but in some the Generic Characters are not properly attended to by the engraver. I have an Original Painted Copy
of

of this work, in which those defects are supplied and corrected by the pencil; but this is a great rarity.

MERSILIUS, in a work entitled *De Generatione Fungorum*, printed at *Amsterdam*, in folio, 1714, has given twenty-seven indifferent plates; but his figures and dissertations, on the Generation of Fungusses, are not now useful.

MICHELI, in his *Nova Plantarum Genera*, printed at *Florence*, in folio, 1729, has enumerated about eight hundred species; and has given a great number of excellent figures, of every Genera of this order.

BATTARRA, in his *Fungorum Agris Ariminensis Historia*, printed at *Rimini*, in 4to. 1755, on forty plates, has given a great number of figures; all of which are well described, with proper notes and observations concerning them.

SEBASTIN VAILLANT, in his work entitled *Botanicon Parisiense*, printed at *Amsterdam*, in folio, 1727, has amongst many other excellent figures, given about ninety very accurate ones of Fungusses.

SCHÆFFER, in a work entitled *Fungorum qui in Bavaria et in palatunatu circa Ratisbonum nascunter Icones*, published at *Ratisbon*, in 4 vols. 4to. in 1780, has given three hundred and thirty large plates: Many of the subjects are represented in all their various appearances, and, by that means, one plant is often made the subject for several plates; so that the number of plates greatly exceeds that of the real species of plants figured by him. In this work the impressions are taken on both sides of the paper.

Monfieur

Monfieur BULLIARD, in a work now publishing in *Paris*, entitled *Champignon de la France*, has in a great number of very beautiful and elegant figures displayed, in a moft fuperior manner, the *Fungi* of that kingdom.

In the works of JACQUIN,—in the *Flora Danica*,—and in the excellent work of our own countryman, Mr. WILLIAM CURTIS, entitled *Flora Londinensis*, now publishing in numbers, in folio,—are given, interſperſed with other plants, many accurate figures and deſcriptions of Funguſſes: So that we may hope in time *to ſay*, That this extenſive branch of Natural Hiſtory, is no longer a Chaos, or a Shame to the Science of Botany.

It may not be improper here to remark, that in all the Copies of this Work which have been or will be ſold, Coloured, the Plates are taken off on the beſt Royal Paper, either Royal Writing, or what is called Wove or Vellum Paper; but in all Copies that have been or will be ſold, Uncoloured, they are taken off on an inferior Paper, the ſame with that of the Letter-Prefs.

Stannary, near Halifax,
December 12, 1789.

ERRATA.—Page 94. l. 30, add *.—P. 100, l. 8, eraze a.—P. 102, l. 21, r. afterward becomes.

Fig. 1

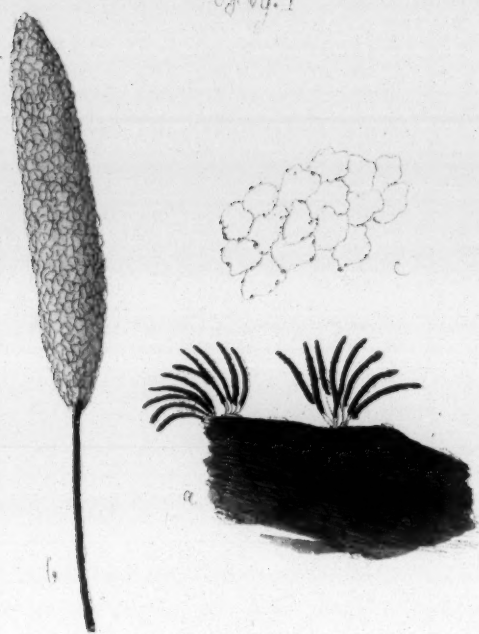


Fig. 2

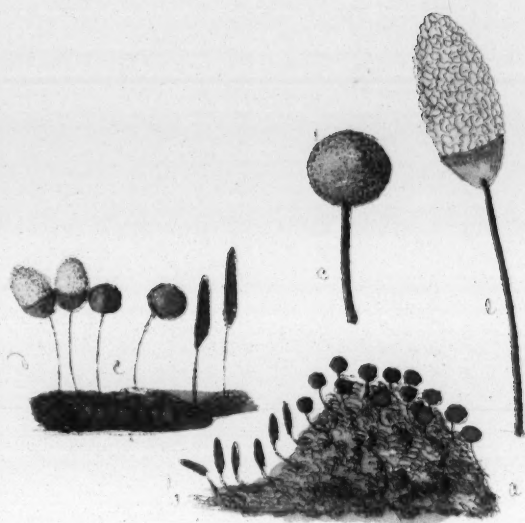


Fig. 3

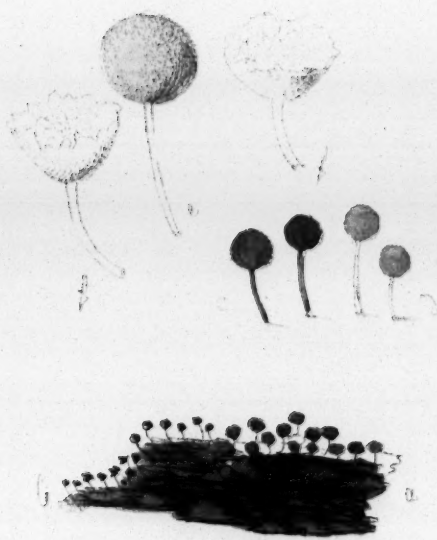
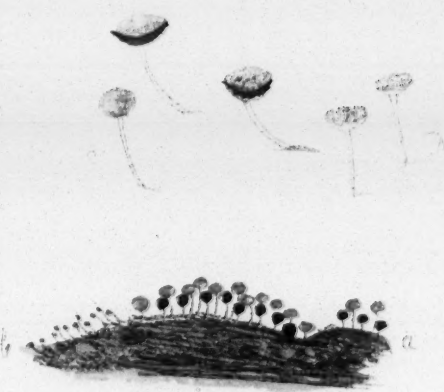


Fig. 4



A N

HISTORY OF FUNGUSSES,

GROWING about HALIFAX.

G E N U S V.

C L A T H R U S.

* *stalked.*

CLATHRUS *stipitatus*, *capitula oblongo, axi longitudinali adnato.* Sp. Pl. 1649. Mich.
nov. Gen. p. 215, t. 94. Haller Hist. 2165.

CVII.
nudus.

N A K E D C L A T H R U S.

T A B. XCIII. F I G. I.

THIS consists of a black hair-like stem, a line in length, and a cylindric head, three lines in length; of a fulvous brown colour, and having the appearance of a soft and downy plume. The natural size is expressed at *a*. The magnified figure, at *b*, shews the network. A small particle of the network is highly magnified at *c*. to shew the situation of the seeds. — Grows in the hollows of old decaying stocks and roots of trees, in several places about *Halifax*, in September and October.

CLATHRUS *stipitatus*, *capitula oblongo volvato.* Sp. Pl. 1649. Mich. *nov. Gen. t. 94.*
fig. 1. Relhan Flor. Suppl. 1, p. 30, No. 1046.

CVIII.
denudatus.

P U R P L E C L A T H R U S.

T A B. XCIII. F I G. II.

THIS consists of a globular head, the size of a mustard seed, of a brownish purple colour, supported on a filiform stem, scarce a line in length. The head is surrounded with a cover, which in due time breaks in the top, and gives way to the downy network, which then begins to extend in length, and to assume an oblong figure, the cover remaining like a volva at the base; after the discharge of the seeds, a black oblong axis remains for some time. The natural size of the plant is seen at *a. b.* magnified in two degrees at *c. c.* the smaller with its cover, the larger with its cover taken off before maturity. At *d. e.* magnified in different degrees, when in a state of perfect growth. — Found on moist putrid wood in damp places, in July and August.

CLATHRUS *stipitatus*, *capitula globoso coccineo, villo fusco.* Hudson *Angl. 631, 6.*
Mucor perennis pallidus pileo fulvo. Sp. Pl. 1655. Haller *Hist. 2163, t. 48, fig. 4.*
Relhan Append. alt. p. 28, No. 1099.

CIX.
fulvus.

S C A R L E T C L A T H R U S.

T A B. XCIII. F I G. III.

THIS consists of a globular head, at first of a beautiful bright vermilion colour, supported upon a white stalk, a line in length; as it grows older, the scarlet colour changes to a dark brown, afterwards the cover breaks, and the network appears of a dark fuscous colour. After the discharge of the seeds, the remainder of the plant abides for some time in form of a cup, rent and irregular on the edge. The natural size is expressed at *a. b.* magnified in various degrees, at *c. d. e. f.*

CX.
*flavus.*CLATHRUS *stipitatus*, capitulo globofo villo flavo. Hudson Angl. 631. Mucor perennis
stipiti filiformi nigro capitulo globofo cinereo. Sp. Pl. 1655. Hall. Hist. 2161. t. 48.
fig. 3.

YELLOW CLATHRUS.

T A B. XCIII. FIG. IV.

THE globular head in this is at first of a pure white colour, afterwards becomes of brownish yellow, and when the cover breaks, it discovers a yellow coloured dawning net-work, replete with seeds; after the discharge whereof, a black globe remains, as at *a. b.* The plant is a little magnified at *c. d.*

This plant nearly resembles the last, and may possibly be only a variety of it.

CXI.
*sphaerocephalus.*CLATHRUS *stipitatus*, capitulo globofo cinereo. Relhan Flor. Cant. Append. 31, 1084.
Dil. Musc. t. 14, fig. 5. Hudson Angl. 631, 5. Hall. Hist. 2160, t. 48. fig. 2.

GREY CLATHRUS.

T A B. XCIV. FIG. I.

THE head in this is globular, and of a brown colour; it is the size of a large poppy seed, and is supported on a brown stem about twice its length. This species is distinguished from its congeners by an oblong, swollen, transparent base, as in the magnified figures, *a. b. c.* The brown cover breaks, as at *b.* and entirely vanishes, as at *c.* The seeds are expressed at *d.*—Grows in the chinks of old dry wood, &c. at all seasons.

CXII.
*olivaceus.*CLATHRUS *stipitatus*, stipite et capitulo villosa olivaceo.

OLIVE CLATHRUS.

T A B. XCIV. FIG. II.

THIS, like the first species, is naked, or without cover, the whole plant, both stem and head, being covered with an olive coloured down or shagginess, consisting of numerous divided and subdivided filaments, to which the seeds adhere. *a.* the natural size of the plant; *b.* a little magnified; *c.* the seeds.—Grows on putrid weeds, when thrown on heaps to rot for manure.

This plant makes the link which unites the *Clathrus* with the *Mucor*.

* *acaulis.*CXIII.
*turbinatus.*CLATHRUS *acaulis turbinatus* villosa flavescens. Hudson Angl. 632, 8. Mich. Gen.
214, t. 94. fig. 2. Hall. Hist. 2168, t. 48, fig. 7.

TURBINATED CLATHRUS.

T A B. XCIV. FIG. III.

THIS is sessile, grows in numerous clusters, the size of a poppy seed, and of a dusky yellow. It is turban-shaped, adhering by a narrow base. The cover breaks near the top in various *lacinae*, and the network swells out of the rupture, for the discharge of the seeds. See the magnified figure.—Grows on putrid wood, in damp places about Halifax, plentifully.

This plant makes the link which connects the *Clathri* with the *Lycoperdi*.

Fig. 1.

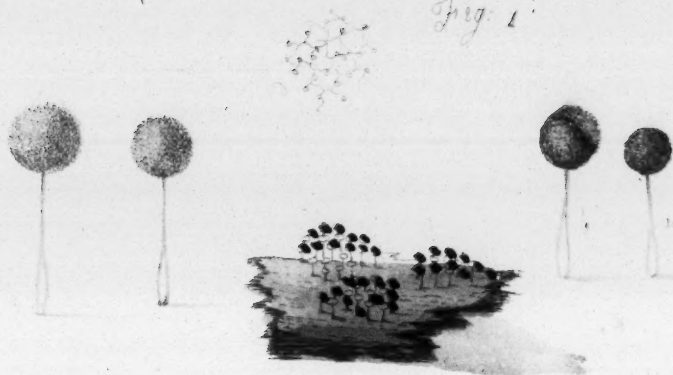


Fig. 2.

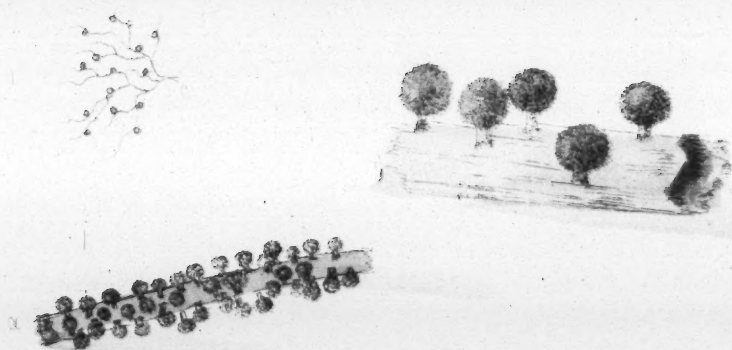


Fig. 3.





Halvella mitra. 1866.

A N
HISTORY OF FUNGUSSES,
GROWING about HALIFAX.

G E N U S VI.
H E L V E L L A.

* *stipitatae*.

HELVELLA *stipitata*, pileo deflexo adnato lobato deformi. Sp. CXIV.
 Pl. 1649. Schæf. Fung. t. 159, 160, 161, 162, 282, 320, mitra.
 322. Hall. Hist. 2246. Mich. Gen. p. 204, t. 86, fig. 7,
 8, 9. Ray Syn. 8. Relhan Flor. 436, No. 959.

MITRED HELVELLA.

T A B. XCV.

THE root consists of a few fibres, adhering to the base of the stem.

The stem is four or five inches high, of a white colour, hollow within, and of an irregular surface; being much twisted, and sunk in furrows between swelling ridges; frequently gashed or rent in several places, particularly near the root.

The pileus or hat, when the plant is in its common state, is mitre-shaped, as in plate 95,—of a dusky kind of pale olive colour, the thickness of glove leather, of a brittle substance, and feels like velvet between the fingers:—It is, however, subject to vary greatly in shape and colour, as may be seen in SCHÆFFER'S *History of Fungusses*, in the plates above cited; where he figures many elegant varieties, which I have not observed to grow in this neighbourhood.

Grows in the shady parts of moist woods, and is a rare plant about *Halifax*,—except in the year 1777, when it abounded in many woods, hedges, &c. as is mentioned in the Introduction.

- CXV. *HELVELLA stipitata, acetabulo extus sub aspero, plano aut hispida. concavo.* Schæf. Fung. t. 167. Hall, Hist. 2227. Aët. Petrop. IV, 282, t. 29, fig. 3. Hudson Angl. 636, 9.

HISPID HALVELLA.

T A B. XCVII.

THE root is hard and irregular, emitting a few white, hard, crooked fibres.

The stem is hard, solid, sometimes compressed or fulcated, larger toward the root, and of a dusky kind of pale mouse-colour; the height three or four inches. The colour, in most specimens which I examined, was darkest near the pileus; near the root, paler.

The pileus is hemispherical or salver-shaped, often a little waved round the margin, where a whitish ciliation is visible while the plant is fresh. On the under side of the pileus, as well as upon the stem, a kind of hairy granulation is perceptible, but the upper side is smooth. The size from one to two inches diameter; the substance rather brittle than otherwise, the thickness of fine cloth, which it resembles in the touch. It is a pale kind of mouse colour, turning darker in decay. When the plant is at maturity, on being gently struck, ejects its seeds in form of a fine smoke, with a visible elastic force.

It is a rare plant here, I have only seen it in two places. The specimens here figured, I gathered in a wood below *Highfield*, three miles from *Halifax*, September 27, 1787.

HUDSON places this plant amongst his *Pezizæ*, but the property of ejecting the seeds in form of smoke, which it visibly possesses, induces me to place it with the *Helvellæ*, as SCHÆFFER has also done.



Halvella hemisphaerica.

J. Nelson. Del. & Sc.



HELVELLA *stipitata*, *stipite cylindrico albido, pileo venoso inflato*.—*Elvella clavata*. Schæff. Fung. 149. Dickson *Crypt. fasc.* 1. p. 19. XCVI. *feritoria*.

BATTLEDOR HELVELLA.

T A B. XCVII.

THE root is an hard fibrous knob, of a blackish brown colour, and a little thicker than the bottom of the stem.

The stem while young is cylindrical, solid, soft, pliable, and of a silvery white; as it advances in age becomes a little wrinkled on the surface, twisted, and sometimes torn, especially near the root.

The pileus (if such it may be called) is in shape like the large end of a battledoor for striking a shuttlecock, and the stem resembles the handle. It consists at first of two equal membranes, of a pale lemon colour, united at their sides, plain, and united by their whole inner surface; or, in other words, it imitates a small bladder, with the two sides pressed together. As it advances in growth the two sides become wrinkled, and branching veins begin to originate from that part of the stem which runs into the pileus; at last the sides separate, and the pileus becomes inflated or puffed up; and when the bladder is opened, nothing is found in it, except a few dawning capillary filaments.

This is the *Helvella Inflata*, mentioned in my Introduction, but since, finding that SCHÆFFER has applied that name to a very different species, I have called it as above; SCHÆFFER has figured this plant on the plate above cited, but his figures were taken from dried specimens. The figures in MICHELIS and VAILLANT'S Works, which SCHÆFFER has cited for his plant, have no resemblance of mine.

The specimens which lay on the table by me, while I made this figure and description, on being touched, threw up their seeds in form of a smoke, which arose with an elastic force, and glittered in the sunshine like particles of silver.

Grows in the plantations about *Fixby-Hall*, in September and October.

CXVII. *HELVELLA stipitata, stipite cylindrico, pileo hemisphaerico*
agarici-
formia.
albido.

AGARIC-SHAPED HELVELLA.

T A B. XCVIII. FIG. I.

THE whole plant is white. The stem filiform, half an inch in length. The pileus hemispherical, and about the diameter of a rape seed. They often grow in clusters; sometimes single. The plant is represented of its natural size at *a*. when magnified it appeared as at *b*.

Grows about the roots of trees, under the hypnums and other mosses, in the moist and shady parts of woods about *Halifax*.

CXVIII.

aurea.

HELVELLA stipitata, stipite brevi, pileo umbellifero aurio.

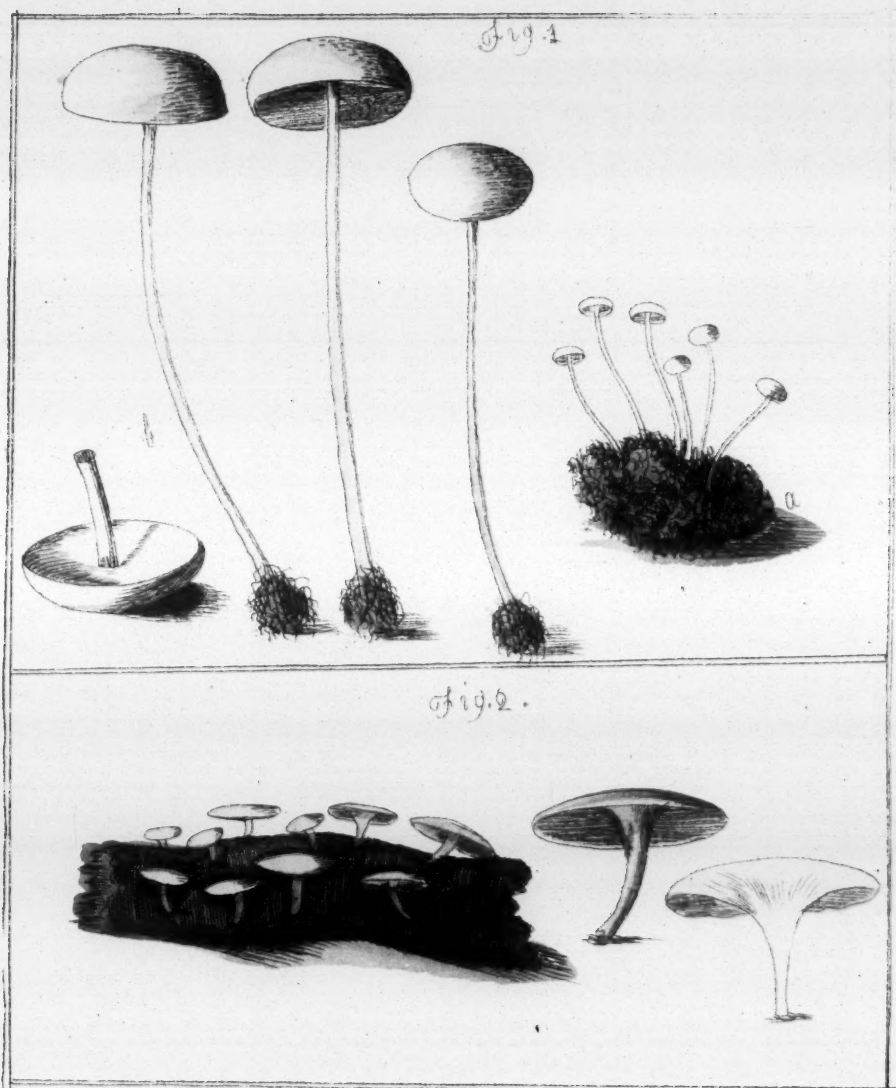
GOLDEN HELVELLA.

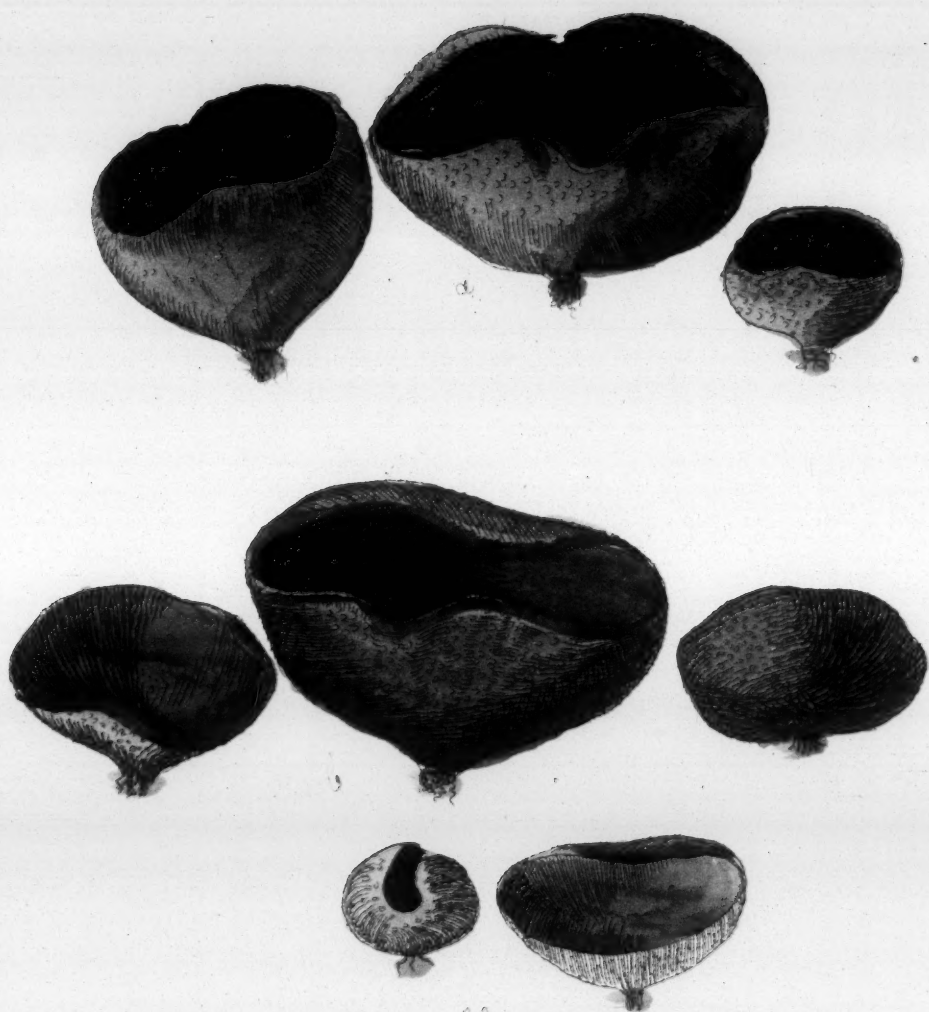
T A B. XCVIII. FIG. II.

THE stem is short, largest above, tapering towards the base, where it adheres to small rotten sticks, &c. by a narrow claw, without any visible fibres.

The pileus is cushion-shaped on the upper side, thin at the margin, when full grown a quarter of an inch in diameter, of a golden colour above, paler underneath. The substance brittle, watery, and semi-pellucid.

Grows on sticks, stalks of plants, &c. in moist and watery places in woods. I find no figure or description which well agrees with either of these plants.





Halvella cochleata
Drawn from the plants by J. Bolton D 1788

* *acaulis*.

HELVELLA *acaulis turbinata cochleata*. *Peziza turbinata cochleata*. *Sp. Pl.* 1651. *Relban Flor.* 466, No. 970. *Hudson Angl.* 637. *Hall, Hist.* 2245. *Schaef. Fung.* t. 150, 155, 156, 274, 280, *et forteffe* 158. *Vaill. Paris*, t. 11. fig. 8. CXIX. *cochleata*.

WREATHED HELVELLA.

T A B. XCIX.

THE root consists of a small central tuft of short fibres.

The plant is of a semi-transparent brittle substance, of a yellowish straw colour when it grows on dunghills, as at *b*. of a brownish dull purple when in garden-walks upon gravel, &c. on old wood often black, particularly on the inside, as at *a*. The diameter from half an inch to two inches; sometimes it grows single, sometimes in bundles, in both states its shape is extremely various, The margin is frequently waved, undulated, and rolled inward; sometimes with rents or gashes, particularly in old plants; it is hollow on the upper side, and imitates the shape of an ear, a faucer, a shell of a patella, a muscle, or a cockle, a thimble, a spoon, or the palm of a child's hand, with many other shapes, as may be seen in SCHÆFFER'S *History of Fungusses*, on the plates above cited. When in a state of perfect growth it emits a copious smoke, on being irritated; a circumstance not attended to by those authors who have placed it among the *Pezizæ*. *Lightfoot*, in his *Flora Scotica*, page 1052, has taken notice of this property, but did not make a proper use of the remark.

Grows about *Halifax* in autumn, plentifully.

- CXX. *HELVELLA non stipitata, cyathiformis margine obtuso erecto.*
coccinea. Peziza cyathiformis margine obtuso erecto. Sp. Pl. 1651.
Schaef. Fung. t. 148. Relhan Flor. p. 465. No. 967.

SCARLET HELVELLA.

T A B. C.

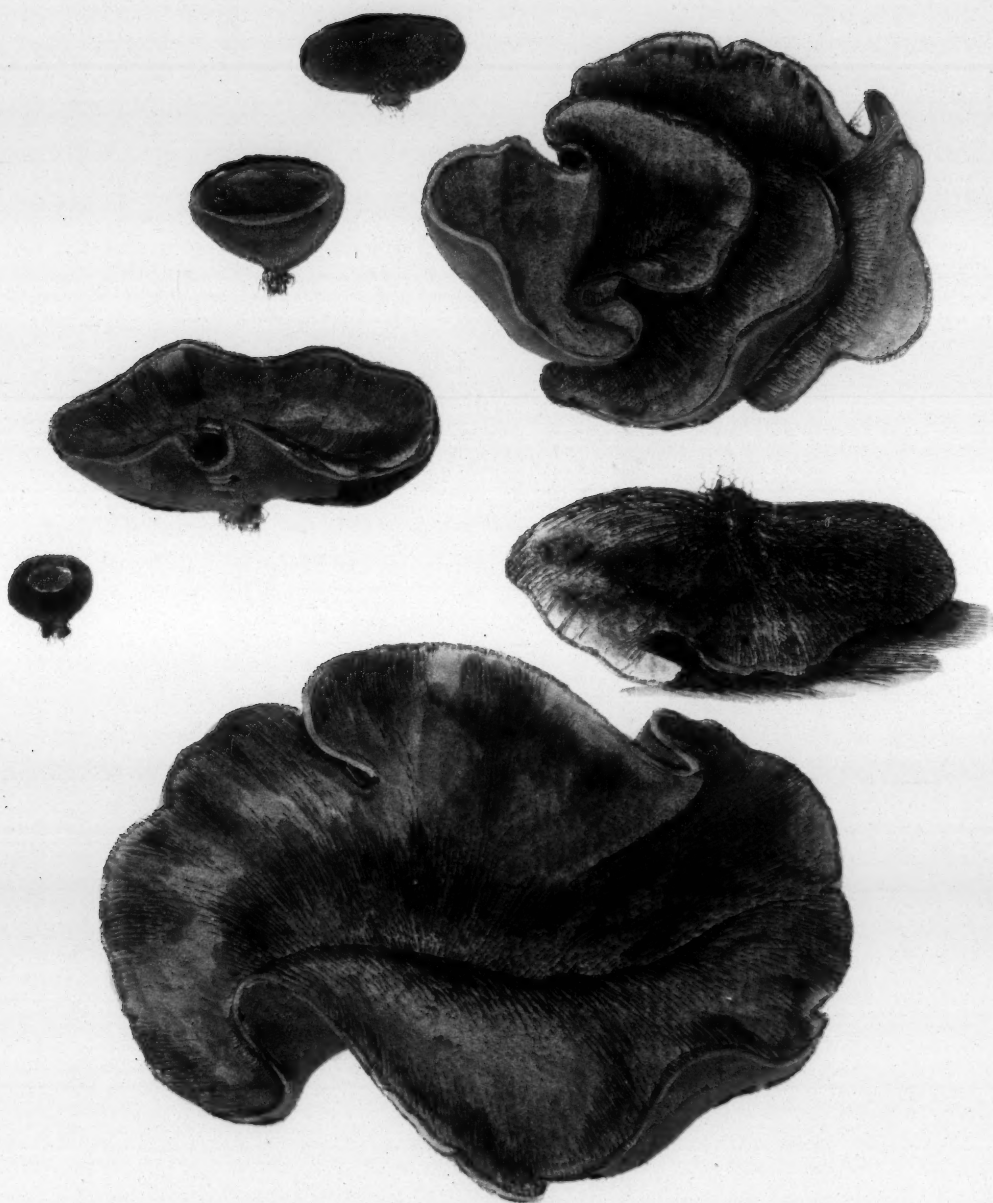
THIS beautiful *Helvella* adheres to the ground by a central root, consisting of a small tuft of black fibres.

The plant is about the thickness of a dressed sheep's skin, being of equal thickness in every part. The margin obtuse, it is paler than the upper surface of the plant, and is waved and sinuated, in a wild and very pleasing manner. The upper surface is of a bright and high orange colour, in some young plants approaching to a bright scarlet.

It varies greatly in shape, sometimes being spread flat upon the ground, sometimes the margin erected on one side and depressed on the other; sometimes several plants grow from the same point, and are rolled and crumpled one upon another; generally the young plants are smooth and entire on the margin, and shaped like the cup of an acorn. It varies in size, from an inch to four inches in diameter.

Grows on moist gravel which has been lately turned up, in garden walks, by road sides, &c. about *Halifax*. It emits a smoke on being irritated, like the rest of its congeners.

There is a crimson *Peziza*, which has been confounded with this plant, as will be seen in its proper place.



Helvella vellea in its various stages and forms.
 (After) Copied from various specimens at various times. By J. H. B.

Fig. 1.

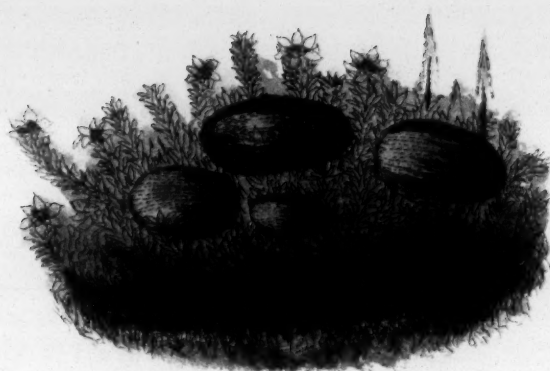


Fig. 2.



HELVELLA *acaulis*, *pileo pulvinea coccinea glabro*.

CXXI.
cartilagnia.

GRISTLY HELVELLA.

T A B. CI. FIG. I.

THIS Helvella is of a firm, gristly, semi-pellucid substance, convex on the upper side, where it is smooth and rather slippery to the touch. The margin is acute and smooth, being quite destitute of hairs. The colour is an high orange or scarlet. The perpendicular section at *a*. shews the thickness of the plant.

Grows upon old walls and rocks amongst moss, particularly the *Polytrichum minus*. *Dell. musc. t. 54, fig. 2*. This is a plant altogether distinct from the *Peziza scutellata* of LINNÆUS, RAY, &c. &c.

HELVELLA (*Purpurea*) *sessilis, pileo vario hemispherico, infundibuliformi floriformi, lobato, plicato, crispo purpureo*. *Schæf. Fung. t. 333. Dickson, fasc. 1. 21. Peziza gelatinoso, coccinea cyphis conicis, simplicibus et gregariis. Hall. Hist. 2221.*

CXXII.
sarcoides.

PURPLE HELVELLA.

T A B. CI. FIG. II.

THIS is of a semi-pellucid substance when fresh, and, on being pressed between the fingers, feels like a stiff elastic gelly. Its figure is extremely various, it being, in its several stages, formed like a club, a cone, a turban, an agaric, a flower, a ruffle, an intestine, and many other shapes, peculiar to itself. Its first appearance is very often club-shaped, as at *a*. The colour, while the plant is fresh, is constantly a dull reddish purple, turning black in decay.

Grows between the bark and the wood, on the stumps of oak trees, the first winter after their fall, and is pretty common about *Halifax*.

Q

A N
HISTORY OF FUNGUSSES,
 GROWING about HALIFAX.

G E N U S VII.
P E Z I Z A.

- CXXIII. *PEZIZA campanulata lentifera*. Sp. Pl. 1649. *Peziza serecia*. Schæf. *fung.* t. 180. *Cyathus sericius intus lævis*. Hall. Hist. 2215. *Mich. nov. Gen.* p. 222. t. 102. fig. 1. *Vaill. Paris*, p. 56, t. 11. fig. 6, 7. *Hudson Angl.* 633, 1. *Lightfoot Scot.* 1048, 1.

L E N T I L P E Z I Z A.
 T A B. CII. F I G. I.

THE root is a little hard tubercle, emitting numerous short brown fibres. The plant from half an inch to an inch high; it is bell-shaped, spreading out at the rim; the inside smooth and shining with a silky gloss, slippery to the touch, dry, and of a pale whitish mouse-colour. There is a gentle asperity to the touch, on the outside, where it is of a darker colour.

While the plant is young, the mouth of the cup is covered with a white membrane, which breaks in the centre, or is detached round the margin, and discovers the lentil-like seed-vessels; which are at first filled with a white gelly, that afterwards become the seed. Each of these lentil-like vessels is attached to the bottom of the cup, by a small filament.—Grows on putrid wood, or in gravel walks.

- CXXIV. *PEZIZA campanulata lentifera, extus hirsuta intus striata*. Sp. Pl. 1650. Schæf. *Fung.* t. 178. *Relhan Flor.* p. 164. No. 962.

S T R I A T E D P E Z I Z A.
 T A B. CII. F I G. II.

THIS species differs from the last, in being formed like an inverted cone rather than a bell, in being of a darker colour, in that the seed-vessels are smaller and paler coloured, in that it is covered with short brown hairs on the outside, and strongly striated within.—Grows on old decaying roots and stocks of trees, about *Halifax*, but is rare.

Fig. 1.

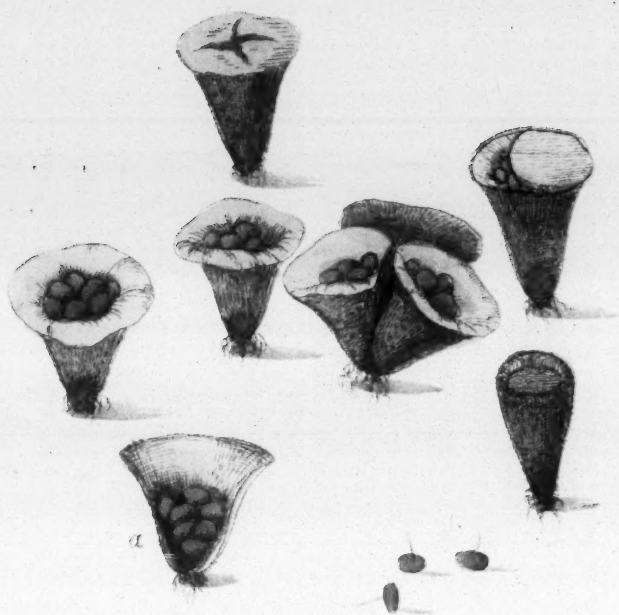
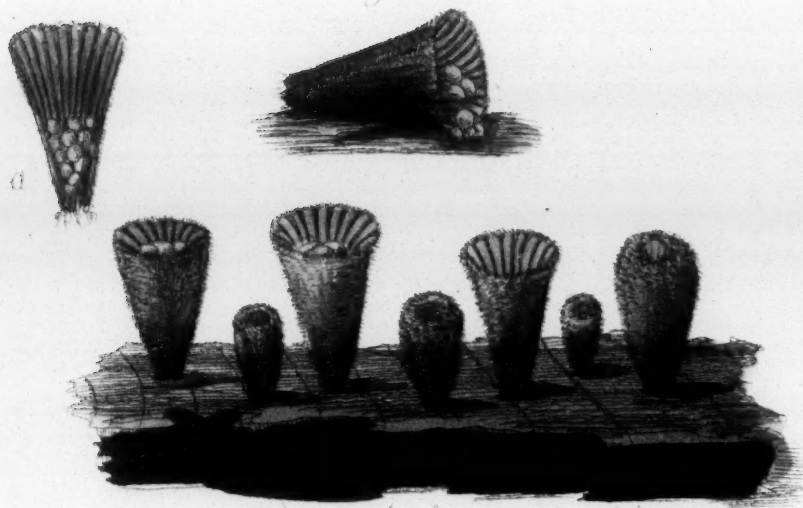


Fig. 2.



J. Bolton



PEZIZA *infundibuliformis*, *disco patente sinuato punctato*. Sp. CXXV.
Pl. 1650. *Elvella cornucopiæ*. Schæf. Fung. t. 165, *cornucopoides*.
 166. Vaill. Paris, t. 13, fig. 2, 3. *Var. punctata*. Relhan
Flor. 465, No. 965. Hudson Angl. 634, 5. Lightfoot
Scot. 1050, 5.

CORNUCOPIA PEZIZA.

T A B. CIII.

THE root is hard, tough, and furnished with a great number of black, short, capillary fibres.

The tubular part is narrow at the base, and expands gradually upwards. The margin is very elegantly lobed and sinuated; sometimes gashed and plaited, and sometimes nearly plain.

The outside of the plant is decorated with rising, branchy veins, and is covered with a bloomy down or powder. The inside is of a dark sordid brown, nearly approaching to black. The surface smooth, and like vellum to the touch. The substance tough and elastic. The plant sometimes grows single, but more frequently in clusters or bundles, five or six from the same root; in this last state, the plants commonly press upon one another, and thereby become distorted, and their shape disfigured.

Grows in the shady parts of woods, where the soil is dry, in the *Shroggs*, *North-Dean*, &c. about *Halifax*.

There is a variety, in which the surface of the limb is covered with a kind of small grains, as figured by VAILLANT, on the plate above cited; and by SCHAEFFER, t. 166.

CXXVI. PEZIZA *substipitata campanulata, interne cremesino externe carneo, margine integro nudo attenuato.*
coccinea.

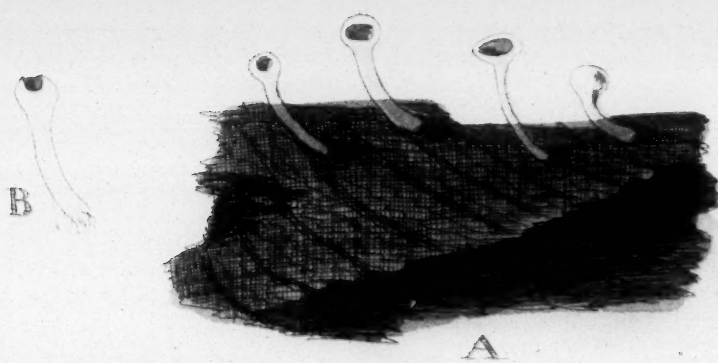
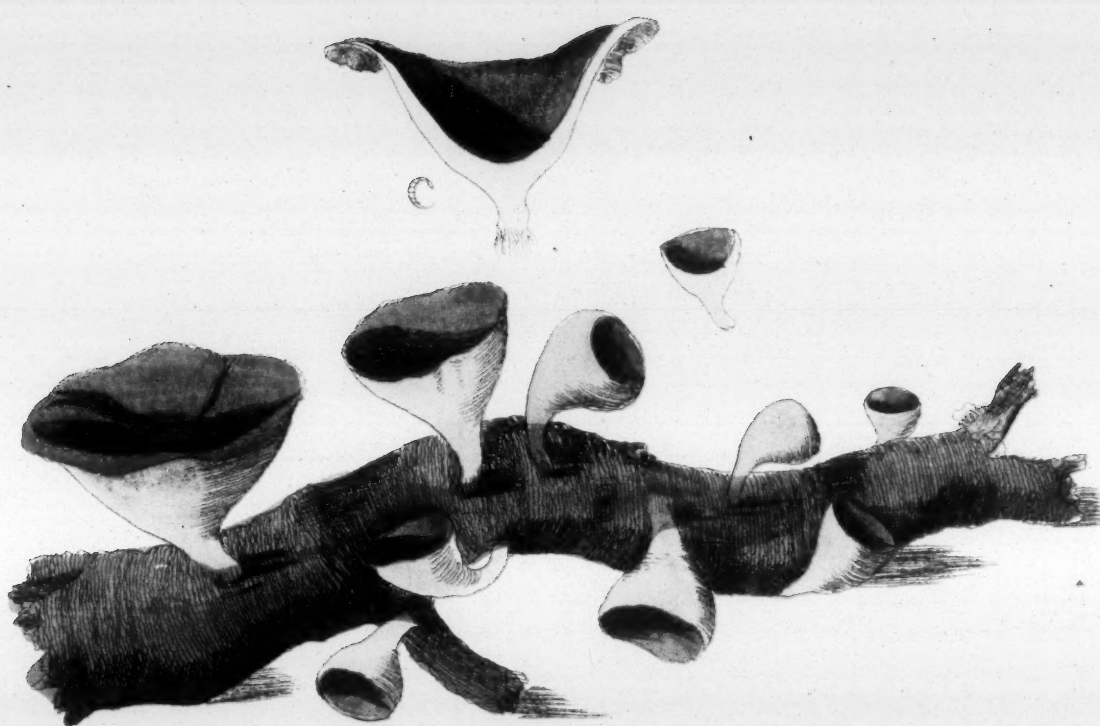
SCARLET PEZIZA.

T A B. CIV.

THIS plant, and the *Elvella coccinea*, figured by *Sbaeffer*, *t.* 148, and by me, *t.* 100, have been considered by most authors as varieties of the same species; and their *synonima* are so confounded together, by the publishers of Floras, that it is next to impossible to ascertain properly, which of them belongs to the one and which to the other. In the *Helvella coccinea*, the plant is of equal thickness throughout; the margin blunt or obtuse; the colour is an high orange or bright scarlet on the upper side, and of the same colour, only a little paler, on the outside. Grows sometimes to be three or four inches in breadth, and of various irregular shapes; is of a friable, brittle substance, and found most frequently upon gravel; and, above all, ejects its seeds in form of smoke.

In the *Peziza coccinea* now before me, the substance of the plant is thickest in the middle, growing thinner to the margin; the colour, in the inside of the cup, is a glowing crimson, inclining to a bloody hue; the outside a pale carnation colour or a pure white. The largest specimens are about an inch in diameter, and most commonly of a regular bell-shape. The substance is firm and tough, and it is found on old sticks, or the branches of dead trees, and never ejects its seeds in form of smoke. I have seen a stalked variety of it perfectly white on the outside, as at A. B. A full-grown plant is cut perpendicularly at C.

Grows about rivulets, in woods about *Halifax*, plentifully, in Autumn and Winter.



Bottom

Fig. 1



Fig. 2



PEZIZA *dura coriacea glabro, marginibus lævis, stipite nigro.*

CXXVII.
ochroleuca.

YELLOWISH PEZIZA.

T A B. CV. FIG. I.

THIS adheres, by a claw at the base, to putrid wood, in wet and moist places. It is of a tough coriaceous substance. The stem solid, and of a black colour, which blackness changes to a dusky kind of yellow, towards the top. The margin is smooth, even, and rather obtuse; the inside of the cup is smooth, and of a dusky kind of ochre colour.

I have gathered this plant in several places near *Halifax*. I find no proper figure or description of it.

PEZIZA *infundibuliformis disco patente, marginibus sinuatis undulatis crispus. Elvella tubaeformis. Schaef. Fung. t. 157, fig. 2. Mich. nov. Gen. t. 82, fig. 2. Vaill. Paris, t. 13, fig. 7, 8, 9.*

CXXVIII.
undulata.

WAVED PEZIZA.

T A B. CV. FIG. II.

THE root is brown, hard, and furnished with short, black fibres. The tube is narrow towards the base, and of equal breadth for about half the length of the plant; it then spreads out into the limb, which is elegantly undulated, waved, and curled, at the margin. It has a few almost imperceptible veins on the outside, the inside is smooth, and feels a little downy to the touch. The colour on the outside is a dusky golden hue, strongest near the root; the colour within a dusky brown. The substance, tough and elastic. The height, one or two inches.

It is a rare species here. I gathered the specimens here figured and described, in *Ramsden-Wood*, October 17, 1786.

CXXIX. PEZIZA *stipitata*, *stipite filiformi*, *limbo plano*, *tota luteo*.
tuba.

TRUMPET PEZIZA.

T A B. CVI. F I G. I.

THIS beautiful little *Peziza* adheres, by a claw at the base, to the putrid stems of decayed plants, in moist places near rills of water. It is shaped like a trumpet in miniature. The height about half an inch. The colour a bright pale yellow.

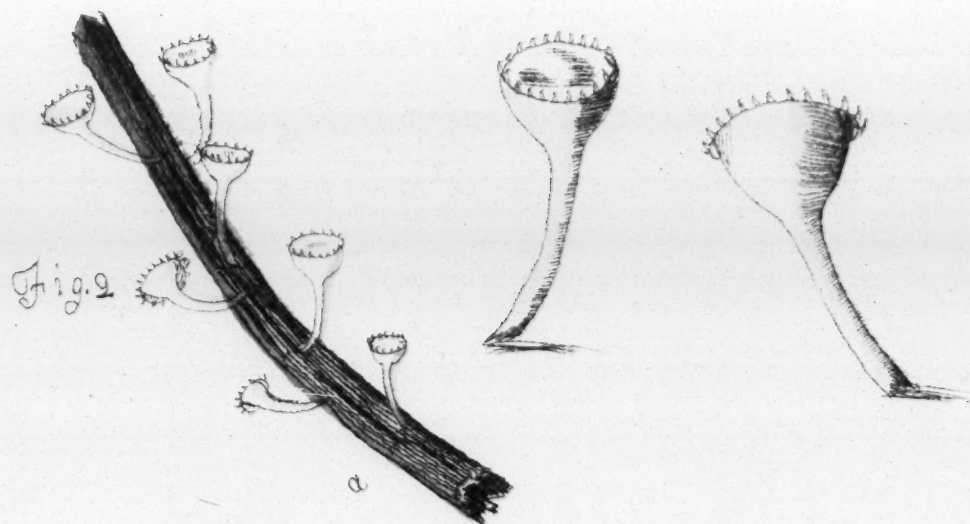
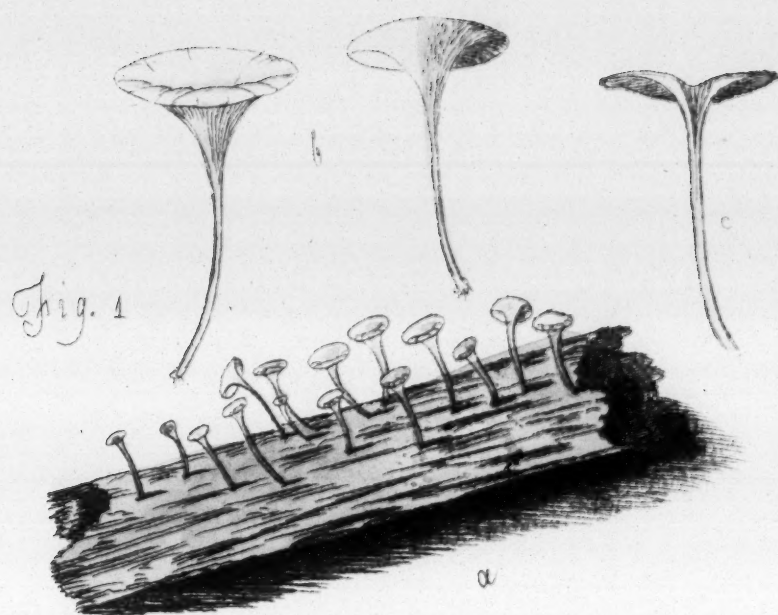
It is a little magnified at *b*. cut through the middle, downwards, at *c*. Natural size at *a*. I find no figure or description agreeing with this plant.

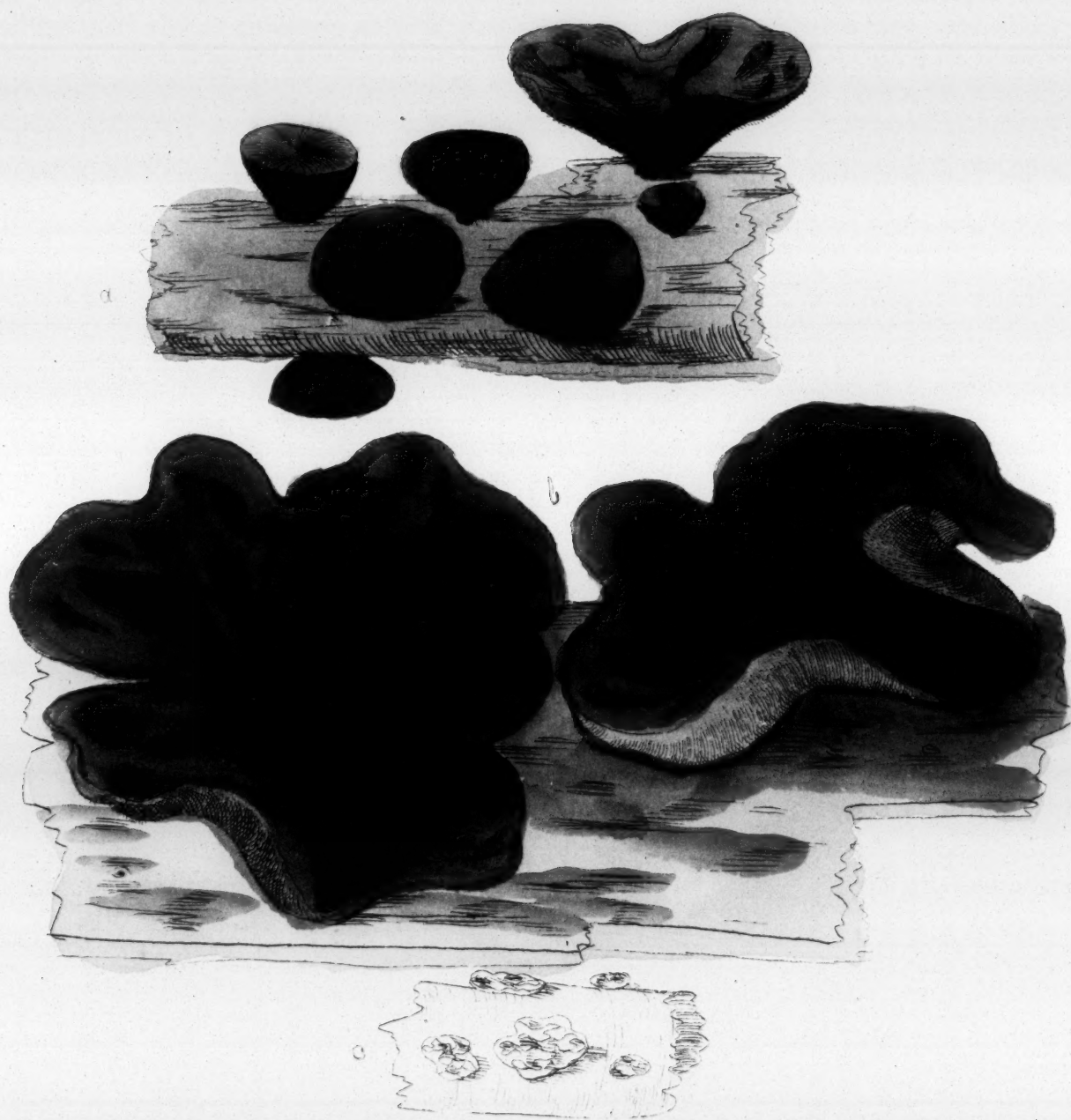
CXXX. PEZIZA *stipitata*, *stipite incurva*, *marginibus ciliaris*. *Mich.*
inflecta. *Gen. t. 86, fig. 13.*

BENDED PEZIZA.

T A B. CVI. F I G. II.

THIS little pretty *Peziza* grows on putrid vegetable substances, in damp places in woods, and about rivulets. It is constantly bent, as exhibited in the figure. The stem is white and pellucid. The cup hemispherical, somewhat opaque, and of a soft pale buff colour. Round the margin it is decorated with upright pellucid points, which look like hairs to the naked eye, but, on being a little magnified, I found them to be thin, transparent films, broad at the base, where they adhere to the verge of the cup, and terminating in a point at top. The plant shrinks much, and becomes tough in drying.





PEZIZA *concavo rugosa auriformis*. Lyn. Syst. Nat. Mur. CXXXI.
 p. 23. *Tramella auricula*. Sp. Pl. 1625. Hudson Angl. *auricula*.
 563. Gleditsch, p. 39, No. 3. Sterb. Theat. t. 27, fig. H.
 Relhan, Flor. 466, No. 971. Mich. nov. Gen. t. 66, fig. 1.

EARED PEZIZA.

T A B. CVII.

THIS adheres to the bark of old elder and willow trees, by a small central root or umbilical cord. The whole plant is of a dark olive colour, and assumes great variety of shapes, depending on its age, or the dryness or moistness of the air. When young, and in a moist state, it is frequently turbin-shaped, as at *a*. when further advanced in growth, in rainy weather, it is greatly extended in magnitude, becomes lobed and undulated; the lobes lying over one another. The substance quaking and gelatinous, of a dusky kind of olive colour, and two or three, sometimes four inches in diameter; it appears in this state, as at *b*. In dry seasons it shrinks up, and becomes of a coal black colour, as at *c*. The upper side is constantly smooth; the under side has a kind of hairiness or *granulæ* upon it, which gives a gentle asperity to the touch.

HUDSON makes it a *Tramella*, as did LINNÆUS in some of his works. Do not the *Tremellæ* and the *Pezizæ* touch one another in this plant?

Grows about *Halifax*, but is rare. The specimen here figured and described, I gathered on the bark of an old willow tree, by *Red-Beck*, near *Shibden-Hall*, in February, 1789.

- CXXXII. PEZIZA *plana margine convexo piloso*. Sp. Pl. 1651. Mich.
scutellata. Gen. 207, t. 86, fig. 19. Schæf. Fung. t. 284. Ray Syn.
 p. 18, t. 24, fig. 3. Relhan Flor. 466, No. 969. Hudson
 Angl. 637, 14. Lightfoot Scot. 1053, 8.

CILIATED PEZIZA.

TAB. CVIII. FIG. I.

THIS grows most commonly on cow's dung, in the fields, sometimes on rotten wood, or on moss in a moist and putrid state. Its first appearance is like a poppy seed, of a pale orange colour; the prominent part covered with stiff upright hairs, when a little magnified, appearing as at *a*. soon the top opens, as at *b*. when the hairs, which before seemed to cover the whole top, are found to adhere to the verge of the cup only; and the shape of the whole imitates a globular goblet. As it advances in growth, the rim expands, falls back; and the disk becomes flat, only a little elevated at the margin. The plant is of a reddish orange colour.

Grows in fields about *Halifax*, plentifully.

- CXXXIII. PEZIZA *plana, marginibus obtusis ciliaris*.
cærulea.

BLUE PEZIZA.

TAB. CVIII. FIG. II.

THIS beautiful *Peziza* adheres, by a small central root, to putrid wood in moist places. The outside is black and smooth; the inside of a bright blue. The margin a little paler and obtuse, being surrounded with soft pale-coloured hairs. The two large figures are magnified.

I do not know that this plant has before been figured or described. I gathered these specimens under the fir trees, at *Burks-Hall*, near *Halifax*, in October, 1782.

Fig. 1.

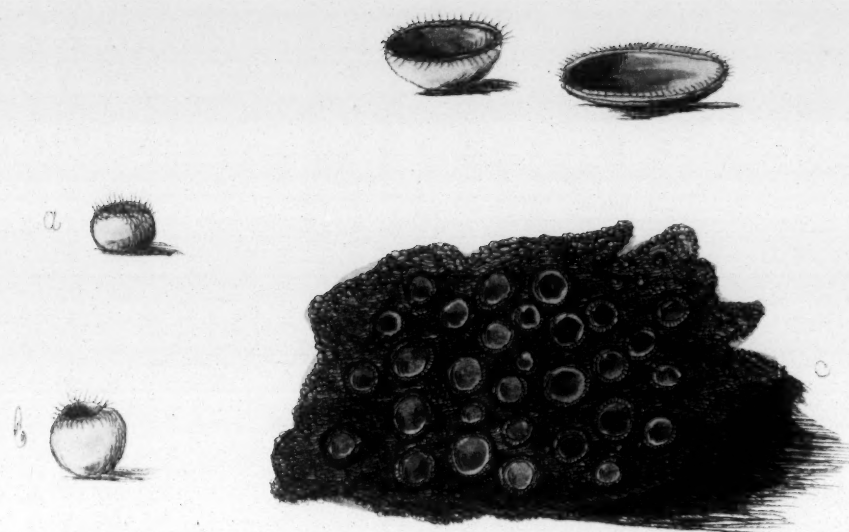


Fig. 2.

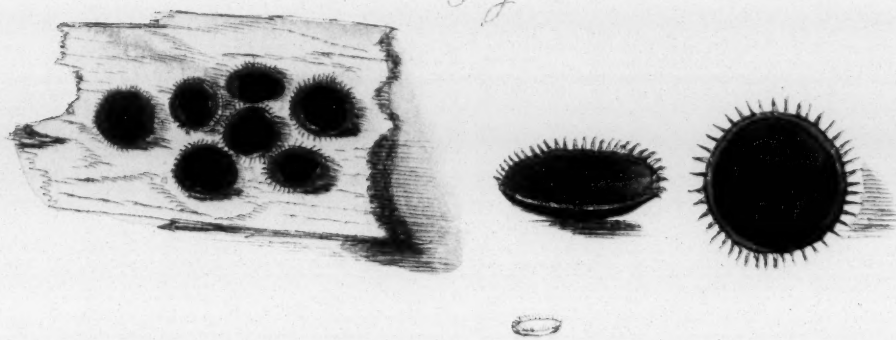


Fig. 1

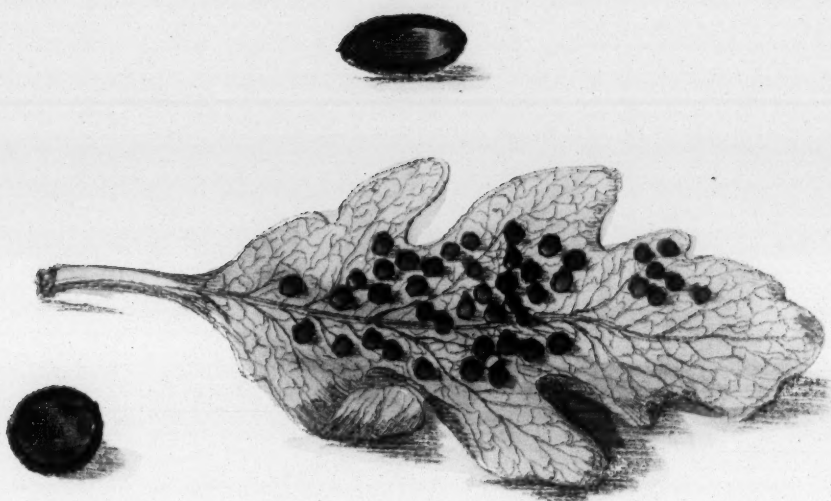
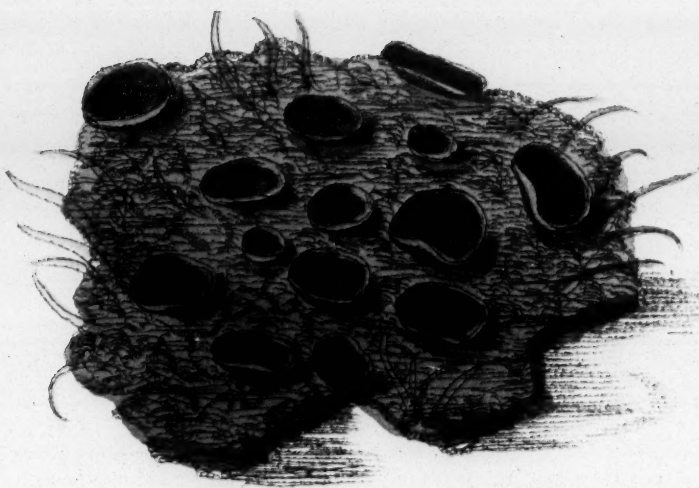


Fig. 2



PEZIZA *acaulis*, *disco viridis*, *marginis nigris*.

CXXXIV.
viridis.

GREEN PEZIZA.

T A B. CIX. F I G. I.

THIS pretty *Peziza* adheres to decaying oak leaves, by its whole under side. The disk is of a dark green colour. The margin broad in proportion, and black. The figures, on the leaf, are the natural size; the two separate ones are magnified.—I saw this plant, in abundance, on the fallen decaying leaves in *North-Dean*, in December, 1785, when this figure was taken. I find no account of it amongst authors.

PEZIZA *acaulis*, *disco fuscis*, *marginibus elevatis pallidis*.

CXXXV.
fusca.

BROWN PEZIZA.

T A B. CIX. F I G. II.

THIS grows on dunghills, when they become dry by long lying unmoved. The disk is of a strong brown. The substance of the plant thin, adhering by its whole base, except the margin; which is entire, a little elevated, thin, and of a pale kind of olive colour. I find no proper account of this species.

LIGHTFOOT, in his *Flora Scotica*, p. 1054, after his description of the *Peziza scutellata*, adds, “It varies of a yellow and brownish colour, and sometimes with a naked margin, destitute of hairs;” but my plant is quite distinct from the *Peziza scutellata*, in any of its states or stages. I have met with it in several places about *Halifax*, but not in great plenty.

A N
HISTORY OF FUNGUSSES,
GROWING about HALIFAX.

GENUS VIII.
CLAVARIA.

* *indivisa*.

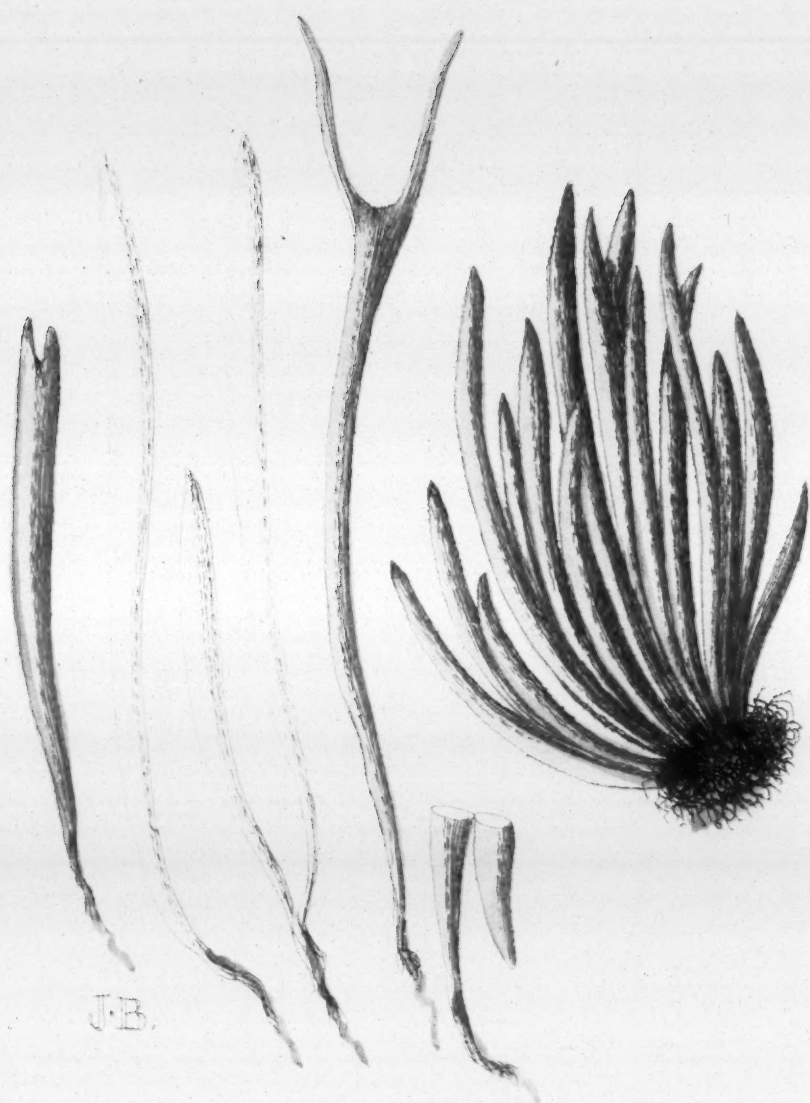
CXXXVI. CLAVARIA *clavæformis simplissima*. Sp. Pl. 1651. Schaef.
pistilaris. Fung. t. 171. Vaill. Paris, t. 7, fig. 5. Mich. Gen. t. 5,
6, 7, 9, 10, 11. Scheuchzar Iter. alp 1, p. 29, t. 3, fig. 3.

SIMPLE - CLAVARIA.

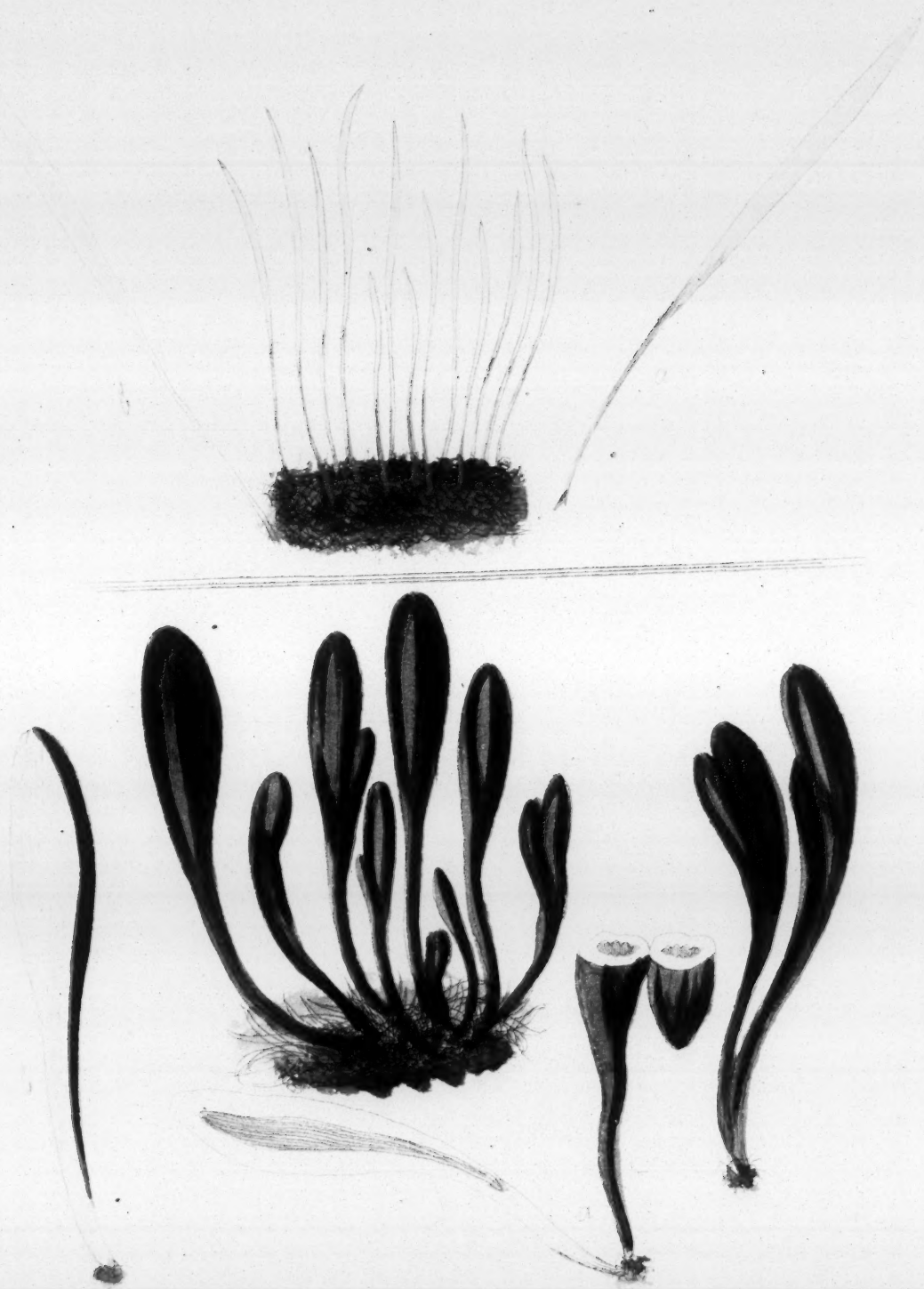
T A B. CX.

IT has a brown fibrous root, which produces sometimes one single, sometimes a great number of, club-shapen plants. It varies extremely in size and colour; its height is generally two or three inches, its thickness about that of a duck's quill. Sometimes it is of a pure white, but varies through all the gradations of yellow, from a pale tinge to a deep strong golden or orange colour. It is of a waxlike substance, easily breaking between the fingers. The separate plants are most commonly simple, and terminate in an obtuse point; but they are sometimes bifid or forked, as expressed in the figure.

On moors amongst moss, where it generally grows single, I have seen specimens four or five inches high. It is a very common plant on dry banks and in barren pasture grounds, about *Halifax*. Authors have made many imaginary species, from the various appearances of this plant. Vid. HUDSON's *Flora Angelica*, p. 638.



J.B.



CLAVARIA *clavata petiolata*.

CXXXVII.

gracilis.

SLENDER CLAVARIA.

T A B. CXI. FIG. I.

I Believe this plant has been considered as a variety of the last, but is at once distinguished, by having a foot-stalk essentially different, in colour and texture, from the club which it sustains. The club is an inch in length, of a dusky white, and, like the other *Clavariæ*, is of a wax-like appearance. The stem is half an inch long; it is smooth, pellucid, and of a colour a little darker than the stem. The plant never grows larger than is expressed in the figure. *a.* is a plant magnified. *b.* a longitudinal section of the same.—Grows in shady places in garden-ground, which has lately been dug;—in Mrs. GAY-GILL'S garden, at *Sba*, abundantly; where I gathered the specimens here figured and described, in October, 1786.

CLAVARIA *clavata intigerrima compressa obtusa*. *Sp. Pl.* CXXXVIII.
 1652. *Schæf. Fung. t.* 327. *Hudson Angl.* 638, 3. *ophioglossoides*.
Relhan, Flor. 467, No. 974. *Lightfoot, Scot.* 1058, 4.

BLACK CLAVARIA.

T A B. CXI. FIG. II.

THIS has a small hard root, furnished with short fibres. The plant is two or three inches high, slender towards the root; the clubbed part greatly increasing in thickness, and terminates very bluntly at the top. While young it is solid within, and smooth on the outside; as it advances in growth it becomes hollow within, as at *a.* afterwards the substance shrinks, and the surface becomes depressed, sulcated, or wrinkled. The colour is at all times black on the outside, the inside white. —Grows in moist pastures, amongst grass, in several places about *Halifax*.

CXXXIX. CLAVARIA *stipite elongata, capillaria, clavula terminali sub-elongata*
gyrans. cylindrica terminis utroque oblongata. Relhan Flor. App. ult. p. 29.
 No. 1102.

TWISTED CLAVARIA.

T A B. CXII. FIG. 1.

IT adheres to small twigs and branches of trees, when fallen in moist places and become putrid. It adheres to them by the curved base of the stem, without visible fibres. The stem is the thickness of an hair, and more than half an inch long; it is of a blackish colour under the eye, but between the eye and the light, of a beautiful crimson; it is upright and smooth while the plant is in vigour, soon after it is taken up it dries, becomes compressed and twisted, as at *a*. The club is white, half an inch long, obtuse above and below, as expressed on the plate. It is magnified, in different degrees, at *b. b*.

I gathered these specimens in a moist place, near *Lee-Beck*, half a mile from *Halifax*, October 22, 1788.

CXL. CLAVARIA *ramis confertis ramosissimis fastigiatis obtusis luteis. Sp.*
fastigiata. Pl. 1652. Schæf. Fung. t. 270, 172, 174. Ray Syn. t. 24, fig. 5.

LOW CLAVARIA.

T A B. CXII. FIG. II.

THIS arises singly or in clusters, from a very small root, which is furnished with numerous downy fibres. The branches are small near the base, increasing in thickness upwards, and, in their ascent, are divided and subdivided into numerous branches, all of which are lopped off at top, with a broad termination, which is often decorated with small rising points round the margin. Sometimes the margin is dentated or crenated, it is most commonly of a yellow or golden colour, but sometimes varies to white or purple.

Grows in barren pastures, about *Halifax*.—Does not the figure in *Vaill. Paris, t. 8. fig. 4.* which he calls *Clavaria coralloides*, belong to this plant?

Fig. 1.

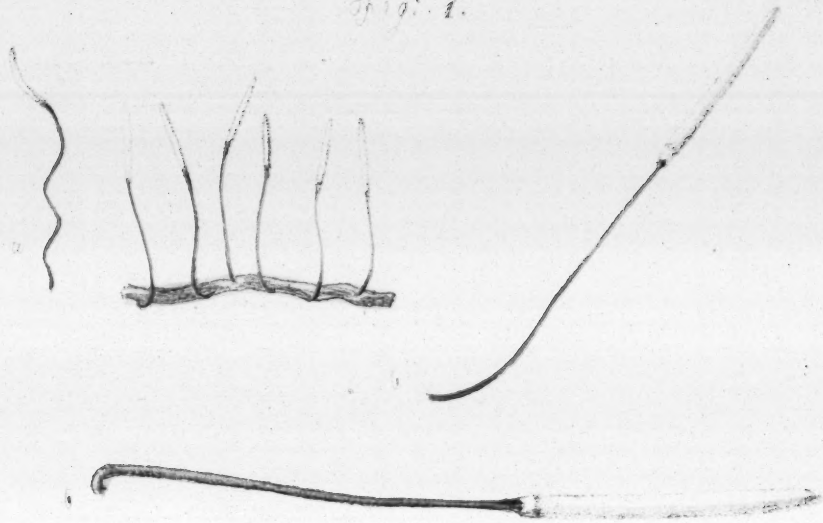
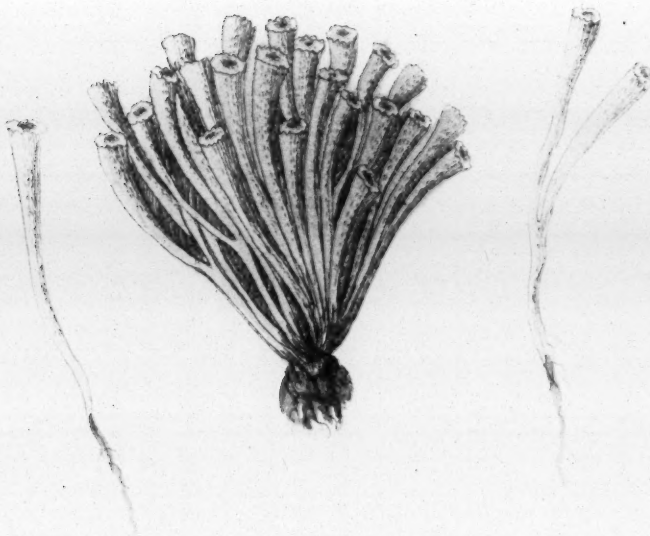
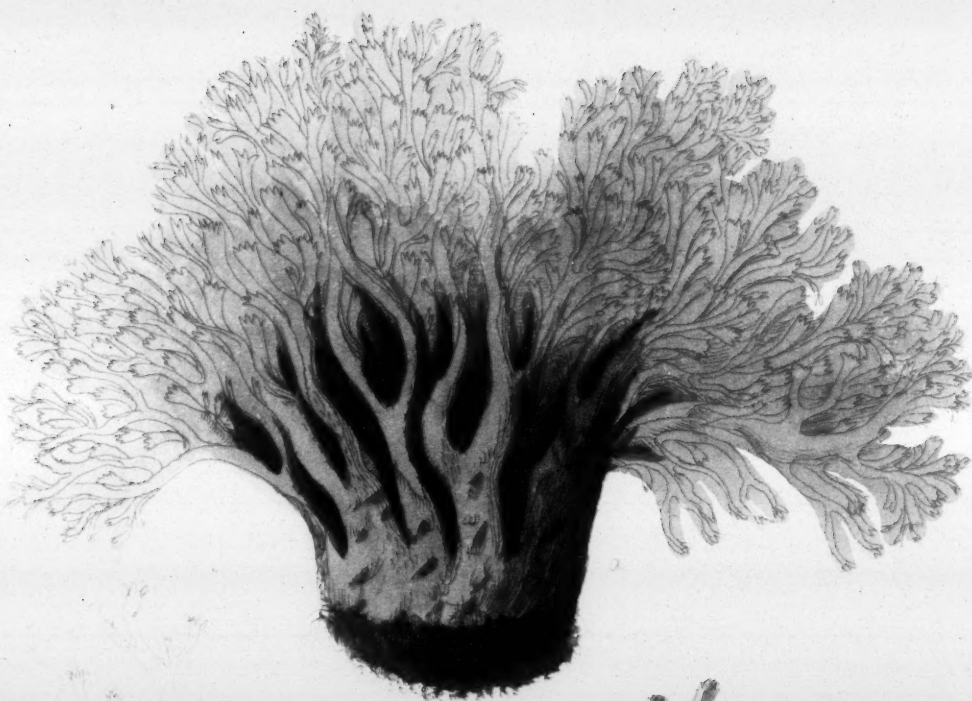


Fig. 2.





GROWING ABOUT HALIFAX. 113

CLAVARIA *ramis confertis ramosissimis inæqualibus*. Sp. Pl. CXLI.
1652. Schæf. Fung. t. 175, 176, 177, 285, 288. Tourn coralloides.
Inst. t. 332, fig. B. Sterb. Theat. t. 11, fig. A. C. D.

CORAL CLAVARIA.

T A B. CXIII.

THIS, from one common root, which is brown and furnished with many fibres, sends up numerous branches, large at the base, and repeatedly divided and subdivided into innumerable lesser ones, each of which terminates at top in three or four tooth-like segments, of equal height. The whole plant is sometimes as large as a *Coleflore*.

It varies greatly in colour, being white, purple, yellow, or olive-coloured; the last of which is most frequent in this neighbourhood.

Grows in several woods about *Halifax*, in October.

LIGHTFOOT says, it is reputed to be one of the best of the fungus tribe, for the Table; and is eaten by the Germans, under the name of *Ziegenbert*.

The yellow specimen figured on my plate, at c. has been considered as a variety of this plant, (*See Vaill. Paris*) but I think it belongs to the *Clavaria foetigiota*, as before mentioned.

- CXLII. *CLAVARIA ramis ramosis inæqualibus luteis.* *Sp. Pl.* 1654.
muscoïdes. *Schæf. Fung. t.* 173. *Sterb. Theat. t.* 11. B. *Ray Angl.*
t. 24, *fig.* 7. *Hudson Angl.* 640, 8. *Relhan Flor.* 468,
No. 977. *Lightfoot, Scot.* 1062, 9. *Bulliard, pl.* 264.

FORKED CLAVARIA.

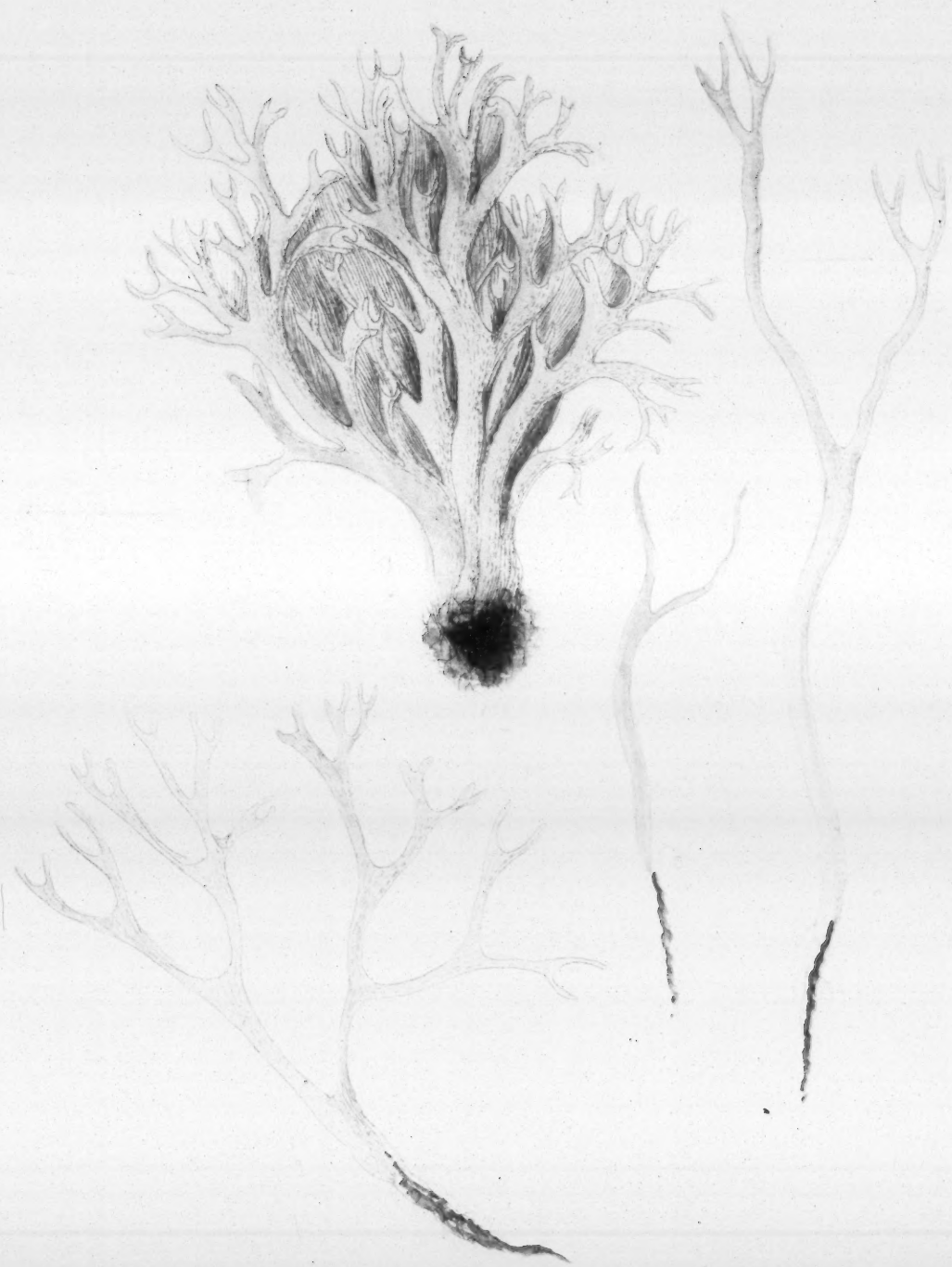
T A B. CXIV.

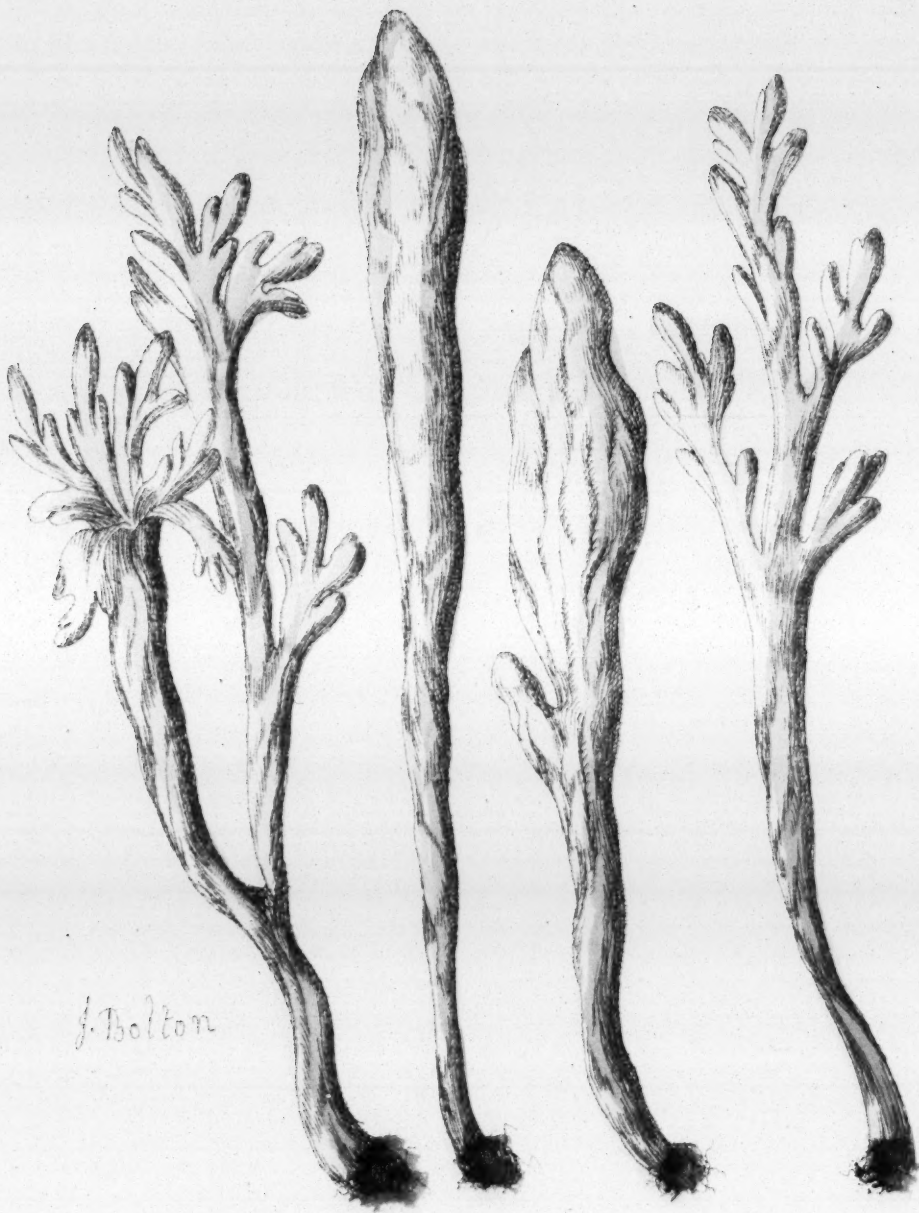
THIS, from a brown fibrous root, sends up the plants sometimes single, as *b. c. d.* sometimes they rise in clusters or bundles, from a small contracted base, as at *a.* in both cases the branches are divided, in a *subdichotomose* order, and always with a forked termination. Sometimes the grains of these terminal forks are of equal, sometimes of unequal length; sometimes they diverge at their origin, and converge near the point. The whole plant is of a fine gold colour while fresh, turning brown in decay. It varies in height from one to four or five inches.

It is a very common plant in cold dry pasture grounds, about *Halifax*, in September and October.

I have seen large luxuriant specimens of this plant, the size of a man's fist; the branches much swelled at the divarications, short, and much entangled together, but all united at the base, and issuing from one small root.

///





J. Bolton

CLAVARIA *subramosa erecta alba.*

CXLIII.
elegans.

ELEGANT CLAVARIA.

T A B. CXV.

THIS plant, from an hard, brown, fibrous root, rises perpendicularly to the height of four or five inches. Sometimes it is simple and undivided, the surface wrinkled transversely, and sunk in longitudinal furrows, with alternate ridges; the whole of an elegant club-shape, as in the two middle figures. Sometimes it is branched in a beautiful manner, in imitation of an hand, a flower, the horn of a rein deer, &c. &c. all the divisions terminating obtusely.

In both states, while fresh and growing, it is of a pure silvery white; and, when viewed between the eye and the light, looks like, in substance and texture, the finest virgin wax. In decay it changes to a pale brown colour, withers, and soon disappears.

Grows in plenty, under the fir trees about *Fixby-Hall*, in September; I have not found it elsewhere.

A N
HISTORY OF FUNGUSSES,
GROWING about HALIFAX.

G E N U S IX.
L Y C O P E R D O N.

- CXLIV. LYCOPERDON *globosum solidiusculum lacerum centro farinefero radice instructum. Sp. Pl. 1653. Hall. Hist. 219, 1. Sterb. Fung. t. 32, fig. B. B. B. Lycoperdon cervinum. spadiceum. Schæf. Fung. t. 188. Dickson Crypt. fasc. 1. p. 25. Mich Gen. t. 99. fig. 2, 3, 4. Lycoperdon aurentium. Bulliard, pl. 270. Vaill. Paris, t. 16. fig. 5, 6, 7. 8.*

SUBTERRANEOUS PUFF-BALL.

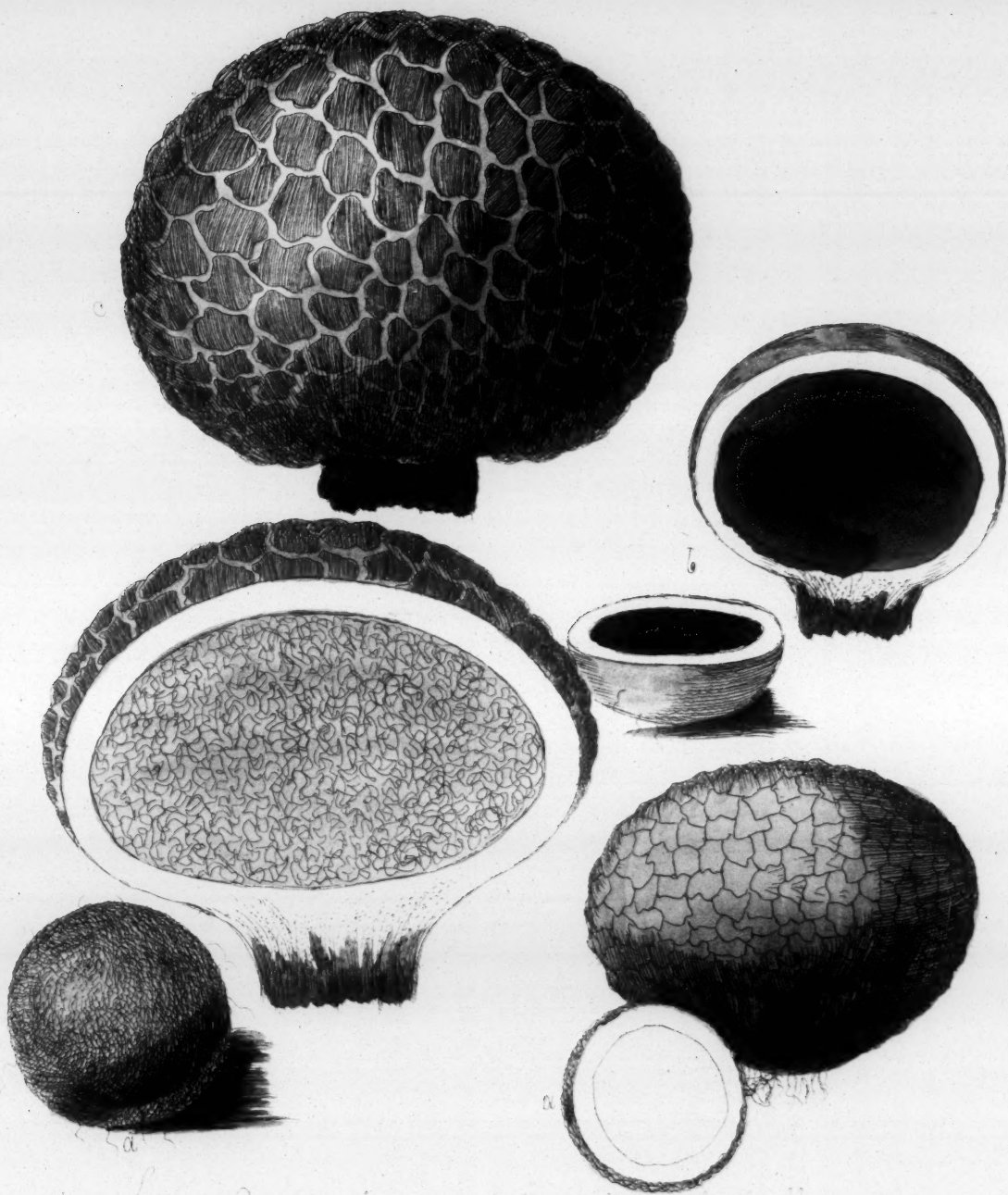
T A B. CXVI.

THIS Puff-Ball sometimes grows to a considerable size, under ground. I have sometimes found it the size of fig. *a.* in the plate; it is then destitute of proper roots, but emits here and there an hairlike fibre from its surface; it is then of a brown colour on the outside, rough to the touch, and the surface sometimes covered with *papillæ*; sometimes marked with furrows, which imitate a rude kind of network, or covered with angular warts, of various irregular sides; sometimes smooth, as at *a. a.*—in this state it is firm and solid, so as to resist the strongest pressure between the hands. The bark is very thick, and its substance white. The internal substance of the plant of a milk colour, and a very close texture.

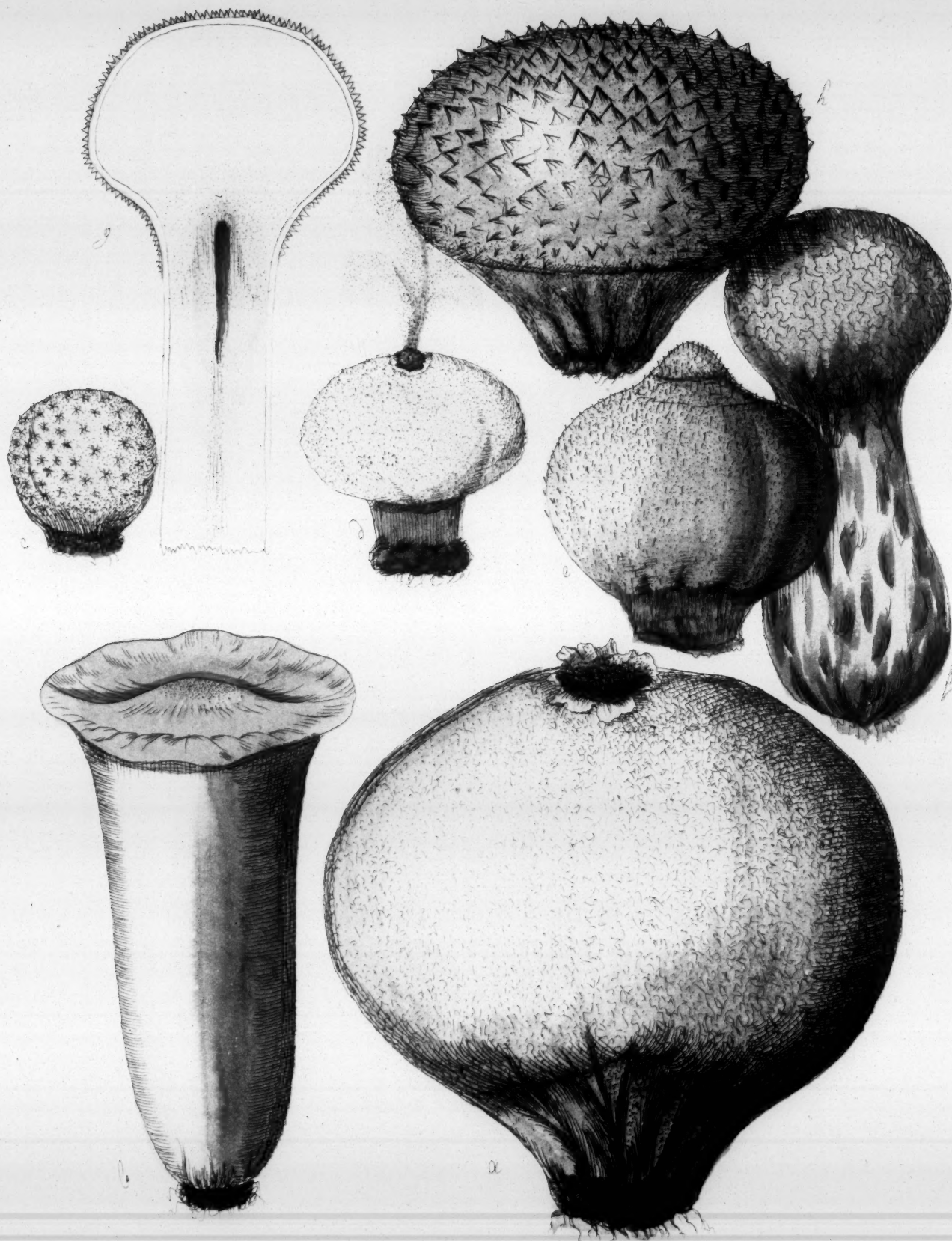
When it arises above the surface, those fibres which chance to be lowest, form themselves into a root, as at *b. c. d.* the plant increases in growth, and the figures on its bark are proportionably enlarged; it assumes a variety of colours, when exposed to the air, as yellow, green, brown, reddish, &c. &c. When further grown, the milk colour changes to a purple, and is beautifully netted with black veins; at last it changes quite black. I have observed it in all these states, in various places in this neighbourhood.

In its smooth state it is the *Lycoperdon spadiceous* of SCHÆFFER; when covered with rising warts it makes the *Lycoperdon aurentium* of BULLIARD, and the *Lycoperdon* of VAILLANT, t. 16, fig. 8.

The bark never breaks, as in the Dusty Puff-Balls; it is perforated in many places by small *scarabæi*, which feed in great numbers upon the internal substance; by means of which insects, the seeds are, probably, conveyed into the earth, for the production of future plants.—In BULLIARD's figure, a fine conjectural smoke arises from one of these perforations.



Lycopodium obscurum var. *obscurum*. Fossiliferous variety from
 Nature, in October, 1848. by J. Schimper at Bonn near Hildesheim.



LYCOPERDON *subrotundum, lacerato debiscens.* Sp. Pl. CXLV.
 1656. Schæf. Fung. t. 184, 185, 186, 187, 189, 190, *bovista.*
 191, 292, 293, 294, 295. Marfiglii Hist. Fung. Carr.
 fig. 1, 2. Mag. monstrosa. Mich. Gen. t. 97, 98. Vaill.
 Paris, t. 16, fig. 4. t. 12, fig. 15, 16. Relhan, Flor. 469,
 No. 979. Lightfoot, Scot. 1067, 2. Hudson Angl. 642, 4.

VARIABLE PUFF-BALL.

T A B. CXVII.

THE varieties of this plant in size, figure, colour, and surface, are almost endless. In the annexed plate, I have selected such subjects, as I thought most likely to give an idea of the plant in all its states. The eight figures before us, being mixed and blended together as they are in Nature, will exhibit almost endless forms; but to give particular descriptions of each is not necessary.

SCHÆFFER, in his *History of Fungusses*, has bestowed eleven large plates on this species, and has copied many of its varieties in near fifty elegant figures. In the *Floras* of RELHAN, HUDSON, LIGHTFOOT, &c. the Synonyma of former authors are, with much care, applied to those varieties, which they respectively were meant to discriminate.

The best specific character of distinction in the species, is, its being surrounded with three separate coverings; the first of these is inseparably connected with the pith or substance of the plant; the second is a tough, leathery, smooth coat; the third or outermost, a soft epidermis, easily rubbed off; and it is in these *epidermi* only, that those varieties of figures, we observe on the surface of the plants, have their existence.

This character, however, must be attended to, while the plants are growing and in a state of vigour; for afterwards the epidermis, with its figures, falls off, vanishes, and leaves the plant quite smooth in its last stages.

CXLVI. LYCOPERDON *bivolvatum*, *primum album denique nigrum*.
globosum.

GLOBE PUFF-BALL.

T A B. CXVIII.

I Am desirous to distinguish this plant from the *Lycoperdon bovista*, for the following reasons: In that it is surrounded with two covers only; the leathery coat, which surrounds and adheres to the pith, and a soft downy epidermis, which is easily rubbed off, but is never distinguished with any kind of figures on its surface: In that it is constantly of a globular figure, of a snow white colour, till at maturity, and turns black in decay; and in that it constantly grows amongst grass in meadow or pasture ground, and is never found in woods, or in company with the *Lycoperdon bovista*, in any of its shapes. A slice cut off, and turned down at the top of one of the figures, shews the colour of the pith, while the plant is fresh; afterwards the downy covering falls off, the other coat lacerates, with a wide mouth, as in the upper figure; turns black, and remains in this state, full of a black smoky powder, for many weeks.

It is a very common plant in the fields, in this part of *Yorkshire*; may, while young, be eaten with safety; and has a taste much like that of the common mushroom.

The powder is used here, for stenching blood, in small new wounds.



4. Ballon. 1788

Fig. 1

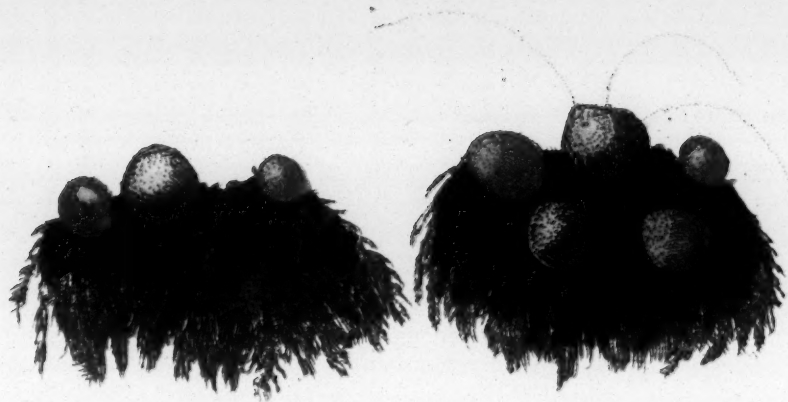
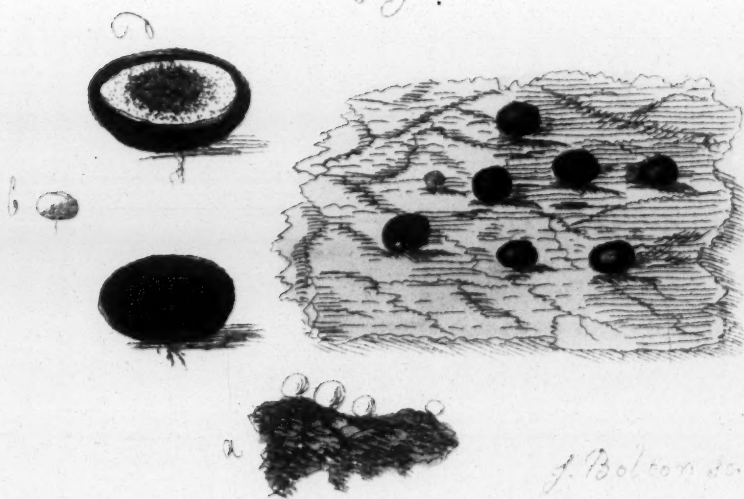


Fig. 2



J. Bolton sc. 1789.

GROWING ABOUT HALIFAX. 119

LYCOPERDON *cortice farinaque purpurea*. Sp. Pl. 1654. Schæf. Fung. t. 193. CXLVII.
Lycoperdon epiphyllum, Hudson Angl. 645, 14. *epidendrum*.

RED PUFF-BALL.

T A B. CXIX. FIG. I.

THE specimens before me, grow on heaps of *Bryum scoparium*, which have been some time dead, and are turning to a wet mould, or vegetable earth.

The figure is round or oval, in some oblong, or pointed on one side. The external covering, in the young plants, is of a soft substance, and a reddish colour; in the older specimens, this outer covering is fallen off, and the inner is of a mouse colour, and a shining surface. The root consists of two or three downy filaments, by which it adheres to the soft spongy matter upon which it grows. On being touched, or gently pressed, it ejects a fine dust or powder, of a pale pink colour, from various small perforations in several parts of the surface. This powder, under CUFF's first magnifier, appeared to be a spherical seed.—Grows in woods about *Halifax*.

A N

HISTORY OF FUNGUSSES,
 GROWING about HALIFAX.

G E N U S X.

S P H Æ R I A.

* *with simple naked sphaerulae*.

SPHÆRIA *disformis varie-coloris carne alto*. Dickson Crypt. fas. 1, p. 23. Murr. Syst. 981. Hall. Hist. 2178. Gleichen Suppl. t. 6. Relhan Flor. Append. 34, No. 1057. CXLVIII.

CABBAGE SPHÆRIA.

brassicae.

T A B. CXIX. FIG. II.

THIS grows on the leaves of cabbage, when in a moist, decayed state, and reduced to a kind of slippery mucilage; they are found, in the greatest plenty, where several folds of the leaves lie over each other, and grow on every fold. In their first stage they are white, gelatinous, transparent, and the size of a mustard seed, as at *a*. from which they change to a reddish brown, of various degrees, as is expressed in the figure. When full grown they are the size of a lentil, and turn quite black: As it approaches decay, it becomes hollow in the centre, as at *d*. Its root is a single white filament.—It is very common about *Halifax*.

- CXLIX. SPHÆRIA *simplex aggregata coccinea minima*. Dickson Crypt. fas. 1, p. 22. Weigel, p. 45, t. 2, fig. 11. Relhan Flor. Append. alt. p. 31, No. 1105.
mori.

MULBERRY SPHÆRIA.

T A B. CXX. FIG. I.

IT adheres to the decaying bark of fallen elm trees, by a narrow base or claw, of an hard firm substance, and of a red colour. The separate *sphærulæ* are naked, or without common cover; they are not properly globular, but rather turban-shaped, adhering by a narrow base, as at *f*. A single *sphærulæ*, laid open in two directions and magnified, is seen at *d. e*. A cluster, cut perpendicularly through the centre and a little magnified, appeared as at *c*.—*a. b.* is the natural size. At its first appearance it is of a golden or orange colour; when full grown, a deep bloody scarlet; turning quite black in decay.

Found in great plenty about *Halifax*, in January and February.

- CL. SPHÆRIA *nuda sphærulæ turbinata extus glauca—intus alba*. Lichen
glauca. *ceruleo—nigricans*. Relhan Flor. p. 424, No. 847.

SEA-GREEN SPHÆRIA.

T A B. CXX. FIG. II.

THIS Sphæria, like the last, is naked, and without common cover. The *sphærulæ* are turban-shaped, as at *b*. they are of a glaucous colour on the outside, and white within; cut open and magnified, they appeared as at *d. e. f.* while young they are full of a white jelly, like the rest of the genus; when old the turbinated top shrinks down, turns black, and becomes hollow, as at *c*. The *sphærulæ*, in this state, have been accepted for the Shields, by those who chuse to call the plant a *Lichen*.

Grows on *Braham-Moor*, near *Leeds*. The *Lichen cerulea nigricans*, of *LIGHTFOOT*, he says, is beset with numerous black convex tubercles or warts; this plant I have seen, and believe it to be a variety of the *L. atro albus*, of the same author. *LIGHTFOOT* saw not the fructification of *atro albus*; I have seen them, and found them to be perfect Shields, of a reddish colour.

Fig. 1

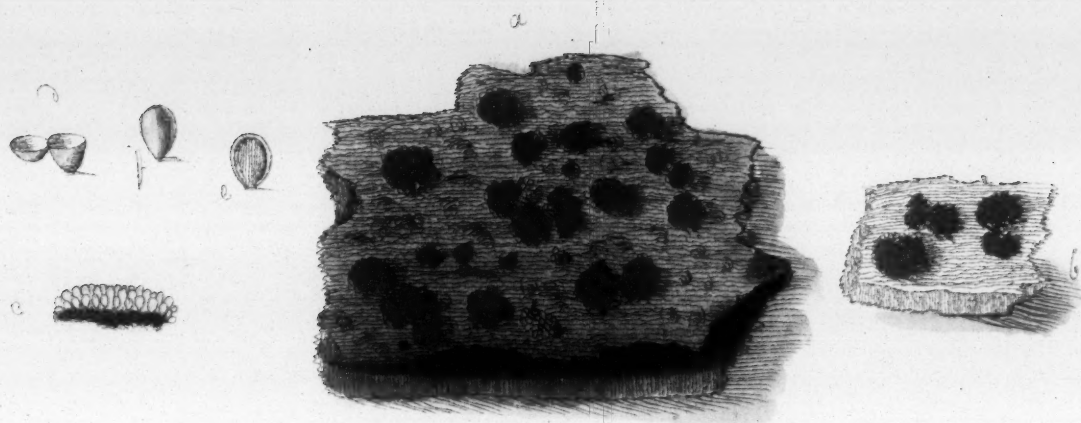


Fig. 2



Adolten Del. et sc. Febr. 20th 1789.

Fig: 1.

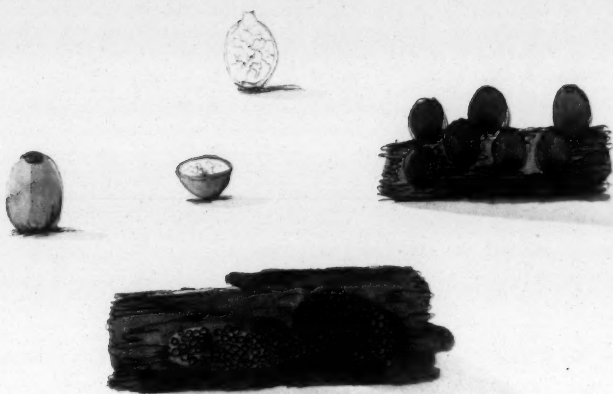
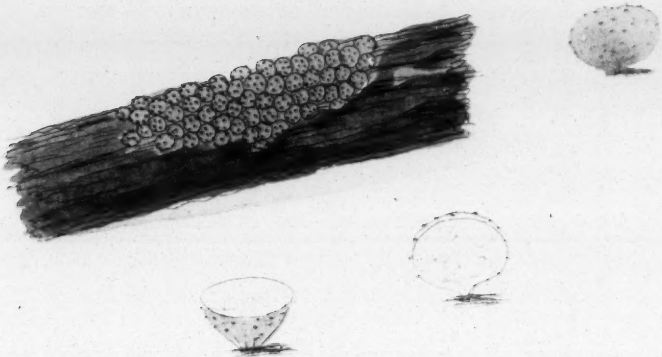


Fig: 2.



SPHÆRIA *simplex, ovata sanguinea apice perforata.*

CLI.
sanguinea.

BLOOD-COLOURED SPHÆRIA.

T A B. CXXI. FIG. I.

THIS Sphæria grows on putrid wood; great numbers grow in close neighbourhood, but do not in any wise adhere to one another. They are oval or egg-shaped; the base being broader than the top. Each has a perforation in the top, and is about the size of a poppy seed, as in the lower figure; the other figures shew them, as they appeared when magnified, and cut both perpendicularly and horizontally. The colour, on the outside, is a deep, bright, bloody hue; the surface shining with a gloss, like polished coral; the inside and the seeds are white.—This specimen grew on putrid wood, beside the spring of *Elm-Cragg-Well*, at *Bell-Bank*, near *Bingley*, in June, 1786.

SPHÆRIA *simplex, globosa virida cortice granulata, granula fusca.*

CLII.
viridis.

GREEN SPHÆRIA.

T A B. CXXI. FIG. II.

THIS is about the size of a white mustard seed; when growing, of a fresh green colour; when dry, a pale brown. It is of a globular figure; adhering, by a small point at the base, to small sticks, stems of plants, &c. when in a state of decay. The surface is studded, at equal distances, with small brown grains, in which I could not perceive any pores. In this, as well as the last, the young plants are full of a white gelly, which, when they are at full growth, changes to a dry powder.

- CLIII. SPHÆRIA *simplex, globosa nigra nitida. Sphæria aggregata. Relhan bombardica. Flor. 35, No. 1061. Lycoperdon nigrum. Lightfoot Scot. 1069, t. 31, fig. inf. Mich. Gen. t. 54, ord. 37, fig. 4.*

GUNPOWDER SPHÆRIA.

T A B. CXXII. FIG. II.

THESE are globular grains, of a shining black colour, growing close together in vast numbers, and so aptly resembling fine gunpowder, that, when I first saw the plant, I was for a moment actually deceived with it. I first found it on the root of a large ash tree, the trunk of which had been sawn off close by the ground; it covered almost the whole surface, in one single stratum; the plants being separate, or not adhering to one another.

Grows most frequently on the end of the grain, on stumps of trees; rarely on the side of the grain. The old plants are perforated in the centre, and white within.

** *aggregate, covered sphærulæ.*

- CLIV. SPHÆRIA *acaulis, aggregata nigra nitida. depressa.*

DEPRESSED SPHÆRIA.

T A B. CXXII. FIG. I.

THIS is of an intense black colour, the surface shining, the figure generally oblong or oval, sometimes irregular. It is of an hard substance, and the rotundance of the black sphærulæ, which are lodged under the bark or common cover, make the surface seem as if covered with low smooth warts. The substance of the common cover is firm and hard, and internally of a fair white; and is replete with sphærulæ, which are of a glossy black.

It differs from the *Sphæria tuberculosa*, in being of a black colour, in being a larger plant, in its compressed figure, in that the bark is internally white, in that the sphærulæ are more numerous, and in that it grows on the external, not internal, rind or bark of fallen and decaying branches of trees.

Fig. 2.

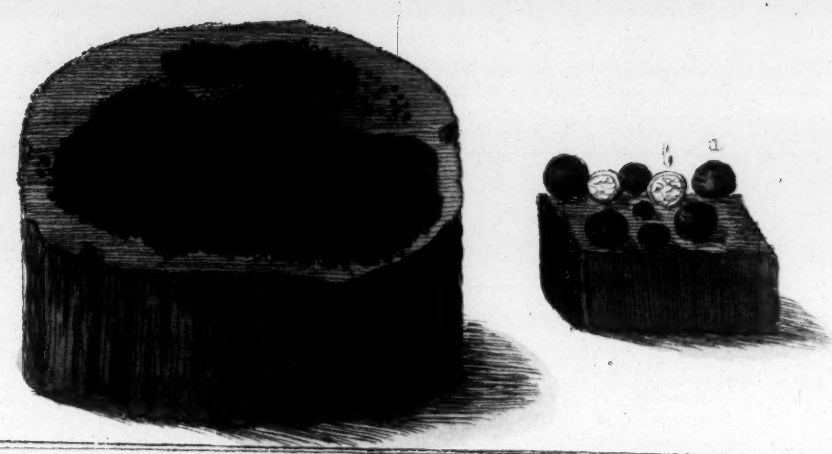
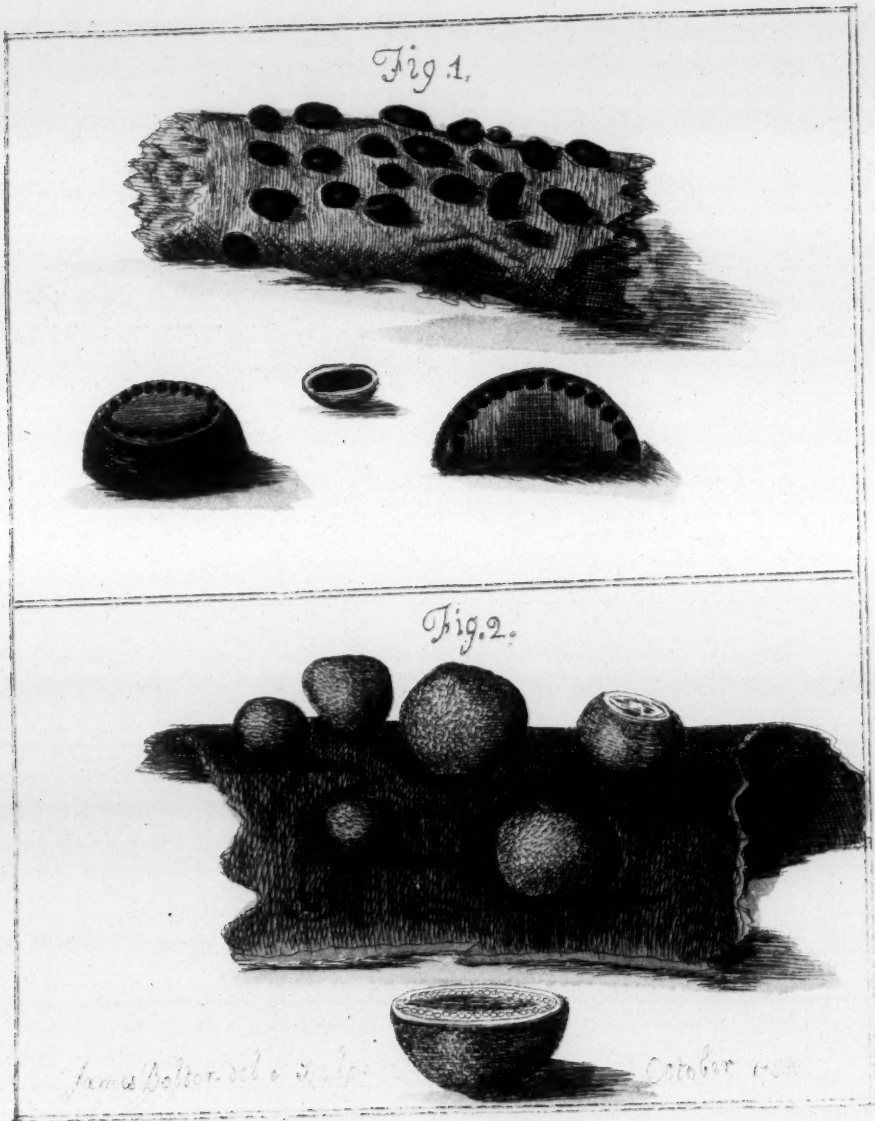


Fig. 1.





SPHÆRIA *acaulis aggregatis tuberculosis fuscis, sphærula concoloris, Lycoperdon nigrum. Hudson, Angl. 644. Dil. Musc. t. 18, fig. 7. Mich. Gen. t. 54, ord. 11, fig. 2. Hall. Hist. 2184.* CLV. *tuberculosa.*

TUBERCULOUS SPHÆRIA.

T A B. CXXIII. FIG. I.

THIS is constantly of a brown colour, both within and without; is the size of a lentil, very prominent, or much raised from the surface of the bark on which it grows, which is most commonly that of the hazel tree, when its branches are far advanced in decay. It always grows on the inner bark, and bursts the outer one to make itself way. The sphærulæ or little spheres, are arranged, at equal distance, under the bark or common cover, as is expressed in the magnified figures. The figure in the centre is a single sphærulæ, cut horizontally and magnified.—It is a common plant in woods and hedges about *Halifax*.

SPHÆRIA *acaulis aggregatis globosis cinereis, rugosis magnis.* CLVI. *rugosa.*

ROUGH SPHÆRIA.

T A B. CXXIII. FIG. II.

THE size of this is from a quarter to half an inch in diameter; it is covered with a bark of a brownish ash-colour. It is rough to the touch, by reason of numerous minute tubercles with which it is covered. The substance is as hard and firm almost as dry wood; it is brown within, and the little spheres or seed vessels are too minute for the inspection of the naked eye. When a little magnified they appeared as in the lower figure.—Grows on the bark of dead and fallen elm branches. I believe this plant to be specifically distinct from the last. The specimen here figured and described grew in *Southowram*, near *Halifax*.

CLVII. SPHÆRIA *acaulis aggregatis oblongis sulcatis*. *Lichen scriptus*
fulcata. var B. *Lightfoot, Scot. p. 801.*

FURROWED SPHÆRIA.

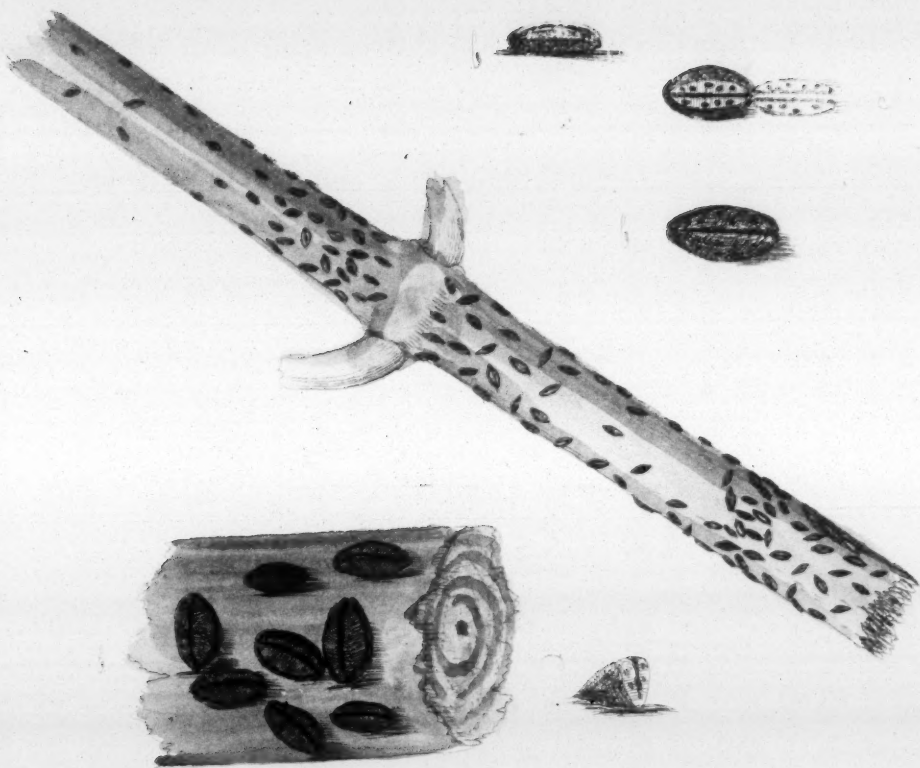
T A B. CXXIV.

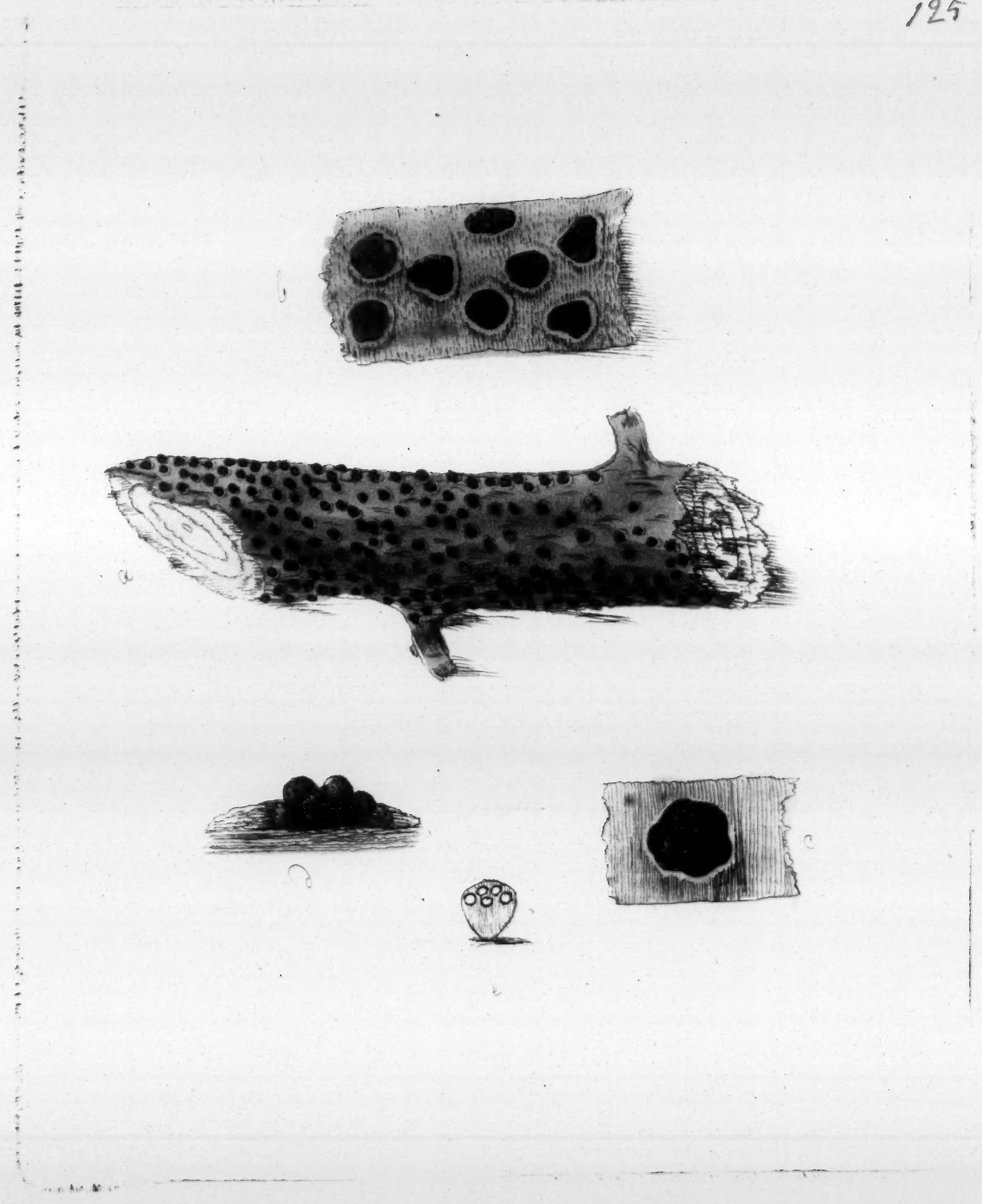
THIS is a small, black, oblong tubercle, the size of a small flea; it is prominent, and has a deep furrow along the back, from end to end, by which it seems as if cloven in two, but the halves are joined together at the base. *a.* is the natural size of the plant; at *b.* it is magnified till the black punctures, which indicate the sphærulæ underneath, are visible; at *c.* it is cut horizontally, and laid open, to shew the disposition of the sphærulæ, or little spherical seed vessels; at *d.* it is cut perpendicularly for the same purpose. The plant, under the double magnifier, appeared like a bivalve shell, when closed and seen in front.

Grows about *Halifax*, in several places, on twigs and branches of ash trees, when in decay.

Possibly the *Lichens, scriptus* and *hebraicus*, may belong to this Genus; but of this I have not made sufficient observation, nor whether these two are only varieties of the above.

124





SPHÆRIA *acaulis, aggregata subtomentosa. An sphæria to-* CLVIII.
montosa. Relhan, Flor. App. alt. p. 31, No. 1107? *obducta.*

COVERED SPHÆRIA.

T A B. CXXV.

THE whole cluster is about the size of a brown mustard seed, and adheres, by its base, to the surface of the inner bark of dead branches, forcing its way through the outer. While young it is covered with a soft downy or cottony matter, of a dead white colour; which cover falls off in the progress of growth, and leaves the aggregate naked, and of a shining black. The plants are figured of their natural size at *a*.—at *b*. and *c*. they are magnified in two different degrees, to shew their appearance while surrounded, at the base, with the outer bark of the wood on which they grow; at *d*. the outer bark is removed, to give a distinct side view of the whole aggregate; this is still further magnified:—at *e*. a single Sphæria is further magnified, to shew the disposition of the sphærulæ or seed vessels. These sphærulæ, when I opened them, were some of them full of a pale coloured gelly, others had a black dust, and some seemed to be empty.

I found it growing in great plenty, on fallen decaying branches of several kinds of trees, in *Bradley-Woods*, near *Elland*, in February, 1789.

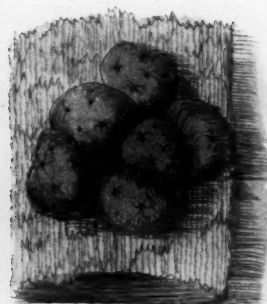
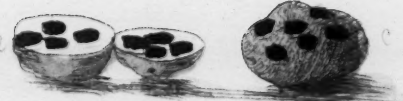
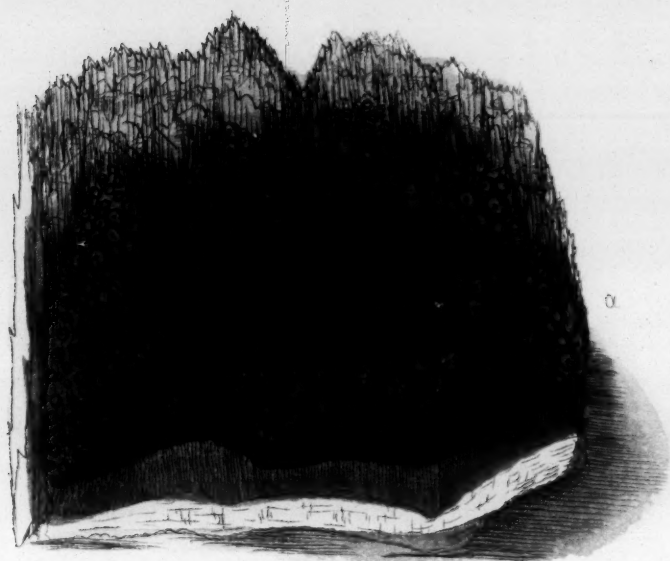
- CLIX. SPHÆRIA *aggregata, subcomposita irregularis perforata*
pertusa. virescens. Weigel, *Obs. Bot.* p. 46, No. 9, t. 2, fig. 15.
 Weber, *Spicil. Gott.* p. 282. No. 298. *Lichen pertusus.*
 Linn. *Mentiff. Pl. Anno 1767,* p. 131, No. 82. Dillen.
Musc. t. 18, fig. 9. Mich. *Gen. t. 52, ord. 32, H, I, K,*
 L, M. Relhan, *Flor.* 421, No. 838. Hudson *Angl.* 525,
 11. Lightfoot, *Scot.* 802, 5. *Sphaeria pertusa.* Hagen,
Hist. Lichen. Pruss. p. XLIX.

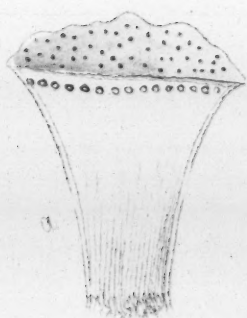
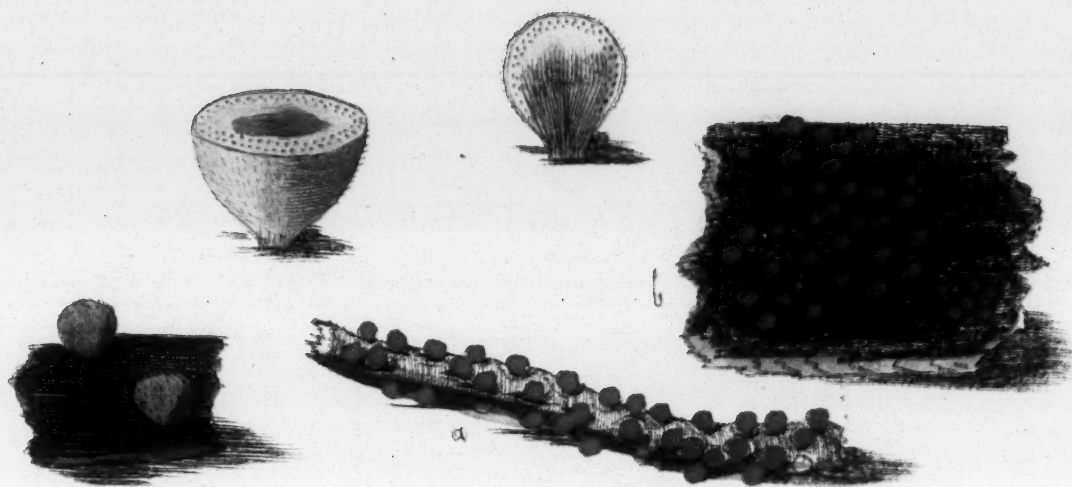
PIERCED SPHÆRIA.

T A B. CXXVI.

THIS grows on the barks of ash trees, in patches of various figures, and, according to its age, from an inch to a foot in diameter. It is, whilst young and growing, of a greenish ash colour; when old or dried, of a pale dusky ash colour. It consists of numerous Sphæria close thrust together, the largest occupying the middle part; their size gradually diminishing towards the margin, on every side. Each separate Sphæria, of the general aggregate, contains from two to six sphærulæ, at first filled with a white gelly, afterwards with black seeds; and after the discharge of these seeds, the empty vessels remain open for many months. The plant is figured of its natural size, as it grew on a piece of ash bark, at *a*. A few separate Sphæria, before the opening of the seed vessels, are magnified at *b*. A single one is cut horizontally, and laid open at *e*. to shew the white substance of the plant within, and the disposition of the black sphærulæ, as they lie imbedded in it. At *c*. a single one is magnified, to shew the open vessels as they abide after the discharge of their contents.—*d*. is a vertical section, when the seeds are ready to be discharged.

Grows abundantly, on the barks of living ash trees, in the neighbourhood of *Halifax*.





SPHÆRIA *acaulis, subglobosa solitaria glabra. Tramella purpurea. Sp. Pl. 1628. Dill. Musc. t. 18, fig. 2. Mich. Gen. t. 95, fig. 3. Sphaeria convexa miniata hirsuta. Hall. Hist. 2189.* CLX. *miniata.*

PINK-COLOURED SPHÆRIA.

T A B. CXXVII. FIG. I.

THIS is the size of a white mustard seed, of a spherical figure, and of a colour between red and pink. It is at first smooth, hard, and solid; as it advances, a thin filmy or downy epidermis is thrown off, under which very minute sphaerulae may sometimes be found; after the discharge of this covering, the plant remains for some time with a downy surface. It is represented of its natural size at *a.* and *b.* The other figures shew it magnified in two degrees, and cut in two directions.—It is a very common plant on decaying bark, about *Halifax*.

*** stalked.

SPHÆRIA *nivea, plana, punctis nigricantibus. Hall. Hist. 2184. Peziza turbinata truncata, disco punctata. Lin. Sp. Pl. 1650. Relhan, Flor. 464, No. 964. Hudson, Angl. 634, 4. Lightfoot, Scot. 1050, 4.* CLXI. *truncata.*

LOPPED SPHÆRIA.

T A B. CXXVII. FIG. II.

THIS Sphaeria is top-shaped, lopped off above where it is white, and marked with numerous small black punctures. The stem or rising part is black; the substance of the plant within is white; under each of the black punctures on the surface is lodged a black sphaerulae. The section at *a.* shews the disposition of these sphaerulae. *b.* is a small particle more highly magnified, to shew the manner in which the seeds are discharged. The substance of the whole is dry, tough, and elastic. —Grows on dry dunghills, about *Halifax*, in Winter and Spring.

- CLXII. SPHÆRIA *clavata integerrima rubra, capite tuberculato.*
militaris. *Clavaria militaris.* Sp. Pl. 1652. *Clavaria indivisa*
flavescens plicata. Var. B. Hall. Hist. 2024. Hudson,
 Angl. 634, 2.

MILITARY SPHÆRIA.

T A B. CXXVIII.

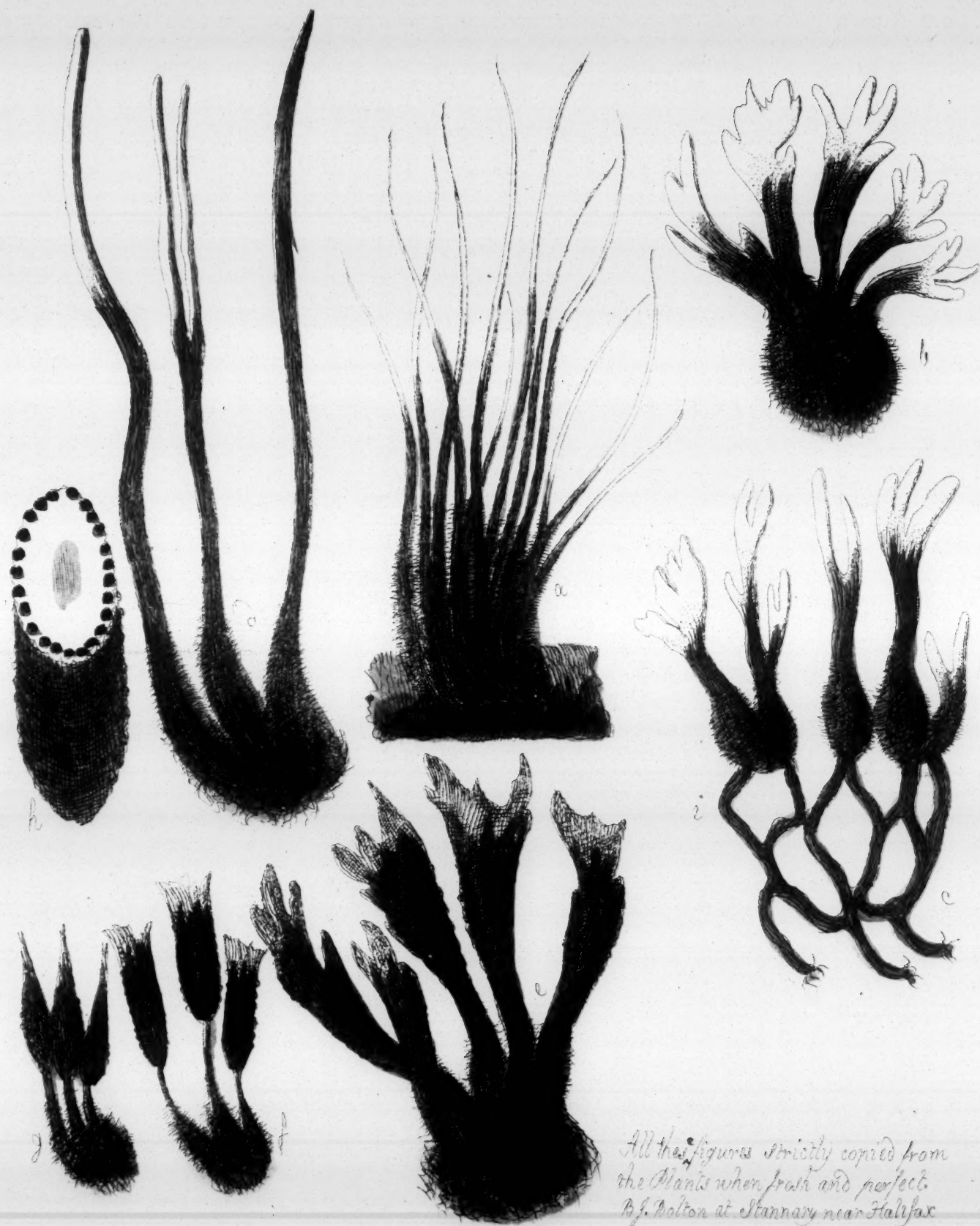
THE colour of the head or club, is a bright orange or golden scarlet. The little sphaerulae, which are lodged under the rind or common cover, cause small prominences on the surface of the club. While the plant is young, these small globular vessels are full of a white transparent gelly, which afterwards changes to a dry powder the seed of the plant, and which is discharged through a small pore or aperture, in the external side of the sphaerulae.

The internal substance of the club and stem is soft, of a fungous substance, of a golden colour, and is easily divided into small shining filaments.

The root is an hard tubercle at the base of the stem, and is furnished with brown fibres.

Grows in this neighbourhood, in garden ground, under the shadow of plants, &c. but is rare.





All the figures strictly copied from
 the plants when fresh and perfect.
 R. J. Bolton at Stannary near Halifax
 .8871. A

SPHÆRIA *subramosa*, *apicibus albidis*, *basis nigris hirsutis*.
Clavaria digitata. Sp. Pl. 1652. Vel *Clavaria hypoxylon*,
ib. 1652. Hudson, *Angl.* 639. Schæf. *Fung.* t. 328. Var.
Lightfoot, Scot. 1058, 1059, 5, 6. *Sphaeria digitata*.
Relhan, Flor. p. 437, 988, et *ib.* 989.

CLXIII.
digitata.

FINGERED SPHÆRIA.

T A B. CXXIX.

THIS *Sphaeria* is a year or upwards, from its springing up to its decay. In September and October the shoots appear, they are then covered with a white farinaceous powder, on the upper part; they are of various forms, sometimes plain and simple, tapering to a long extended point, growing in bundles, as at *a*. sometimes they are simple or forked, and rise to the height of five inches, obtuse at the top, and nearly of equal thickness throughout, as at *d*. sometimes they are two or three inches high, the summits compressed, palmated, digitated, tridentated, or forked; in all these states they are covered, near the top, with the above-mentioned white powder, which continues upon them from October till March, and no *sphaerulae* are in that space of time discoverable. In this state it is the *Clavaria hypoxylon* of the Botanists.

In April and May the white powder turns grey and vanishes, the extremities of the upper divisions also wither and decay: The *sphaerulae* are now formed, and they continue to grow till after Midsummer; and, being lodged near the surface, have the appearance of tubercles on the outside of the plant, as at *e. f. g*. One of these is obliquely cut off, and magnified at *b*. to shew the arrangement of the black *sphaerulae*, as they are lodged in the tough, dry, white, elastic substance of the plant. In this state it makes the *Clavaria digitata* of the Floristæ; soon after which it sheds the seed and perishes.

In both states it is covered with stiff black hairs near the base; the root sometimes insinuates itself between the bark and the wood, as at *c*.

I have observed the plant in all these states, for a succession of years.—Is not the white powder a Male Flower?

- CLXIV. SPHÆRIA *stipitata, stipite flavo cylindrico, pileo ovato castaneo punctato subgeminato, radix tubroso bivolvato intern nigro. Flora Danica, fasc. 9, p. 8, t. 540.*
agarici-formia.

AGARIC SPHÆRIA.

T A B. CXXX.

OF this singular, curious, and very rare plant, on the fifteenth of October, 1786, I gathered the five single specimens, which are exactly figured on the upper part of plate 130. I brought them, shut up in a tin box, amongst other *Fungi*, and on opening the box the following morning, I observed a small gelatinous drop in every pore, on the surface of the pileus;—when, on exposing them to the warm sunshine in my window, in the space of an hour the gelatinous particles dried up, and a white powder was copiously discharged on a piece of blue paper, upon which the plant was laid.

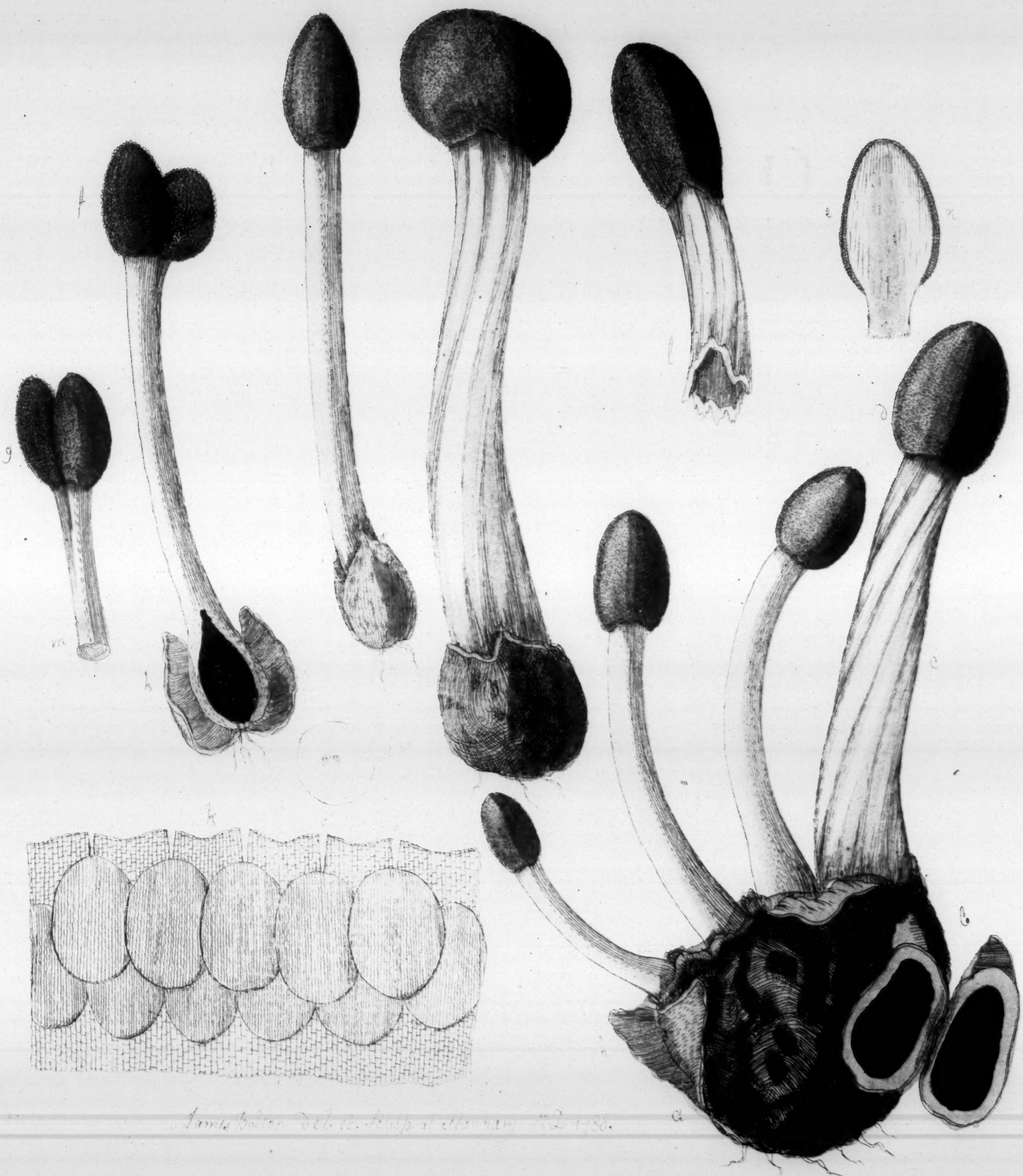
On the twenty-eighth of October, 1787, I saw the plant again, as it is figured on the plate, at *a. b. b.* It did not, in lying by me a whole day, make any kind of exudation from the pores; but the second day, on being immersed in clear spirit of wine, the gelatinous particles immediately began to exude; in a few days the plant contracted very much in size, and afterwards the black turfy substance fouled the spirit, till it now appears quite black, and the plant has lost three fourths of its original bulk.

A section of the pileus, to shew the disposition of the sphaerulæ (or rather ovæ, for they are oval), is seen at *e.* A particle, cut off at *n.* is very highly magnified at *k.*—*o. o.* are pores on the surface, which communicate with the ovæ within.

The root is black, and of a turfy, spongy substance; it is surrounded with a thick volva, which is of the same substance with, and a continuation of, the stem. This volva is surrounded by another, which is dry, husky, and of a brownish green or greenish brown. This outer volva is attached to the inner one, by a few radical fibres.

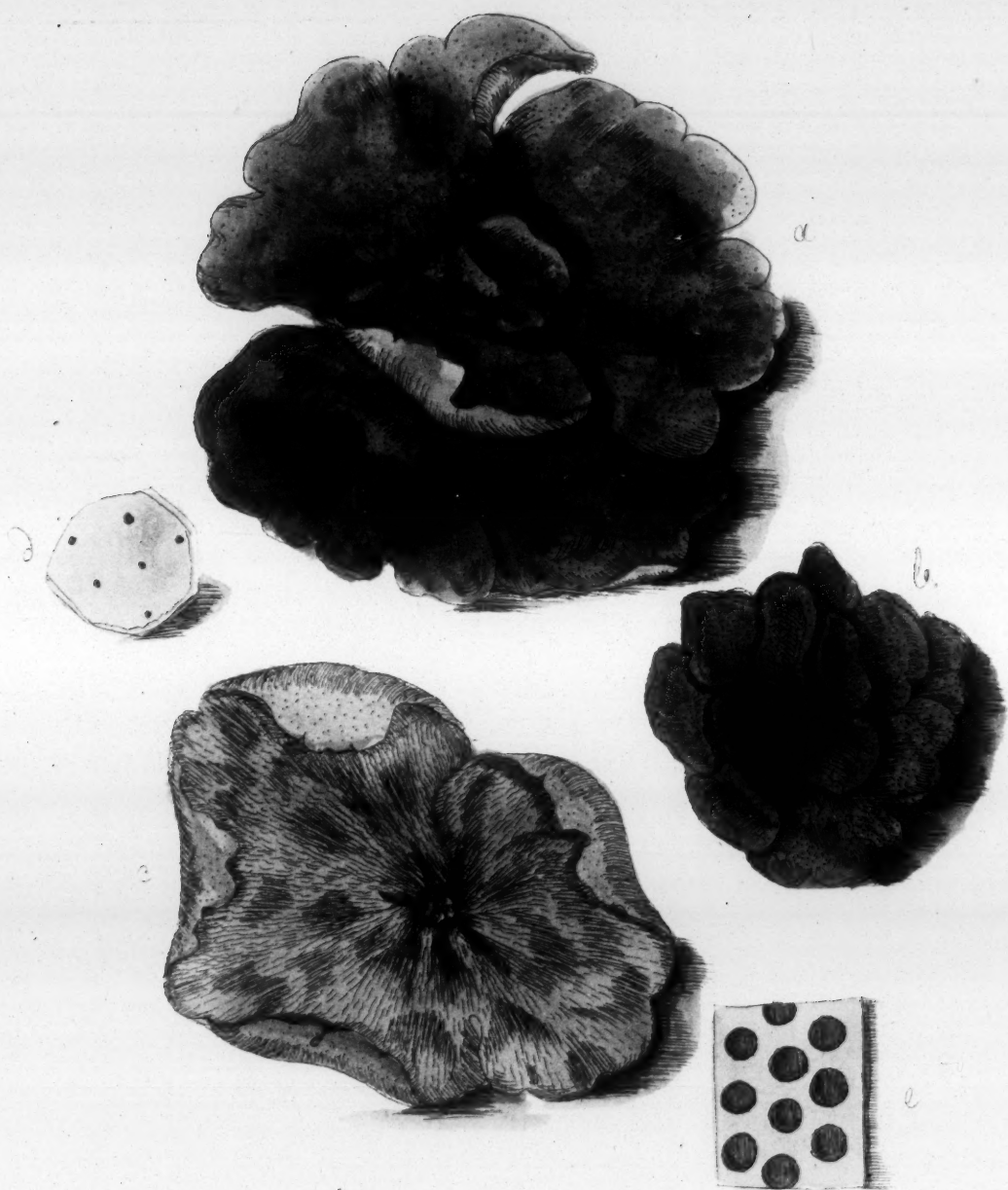
The stem while young is solid and smooth, when old becomes fistular, furrowed, and a little twined: In both states it is soft, pliable, and easily splits in yellow shining filaments. It turns black and rots in decay.

Grows in *Ramsden-Wood*, below *Highfield*, near *Halifax*.



Lamprospora Del. G. Champ. et Bertr. 1850.

191



**** leafy.

CLXV.

foliacea.

SPHÆRIA *umbilicata punctata supra sub-virida infra fulva.*

Lichen miniatus. Sp. Pl. 1617. Dill. Musc. t. 30, fig.

127, 128. Mich. Gen. t. 54, ord. 36, fig. 1, 2, C, D, E, F.

Flora Danica, t. 532, fig. 2. Hudson, *Angl.* 549, No. 79.

Lightfoot, p. 857, No. 66.

LEAFY SPHÆRIA.

T A B. CXXXI.

THIS Sphaeria, from one central root or umbelical cord, spreads out various leaves, of an hard, tough, coriaceous substance, and very different in size, form, and colour. When it grows on rocks, in a low, moist, and shady situation, they are extended to a considerable breadth; the margins lobed, waved, gashed in, and sometimes other smaller ones grow upon them; and in rainy weather, or when immersed in water, the surface is of a strong dusky green, the under side of a fulvous red: In this state it is expressed on the plate at *a*. When the plant is dry the green changes to a brownish ash colour, the marginal lobes roll backward, but the colour of the under side changes not: In this state it is figured at *c*.

On very dry rocks, which are exposed to much sun and air, the leaves are short, thick, hard, of a dusky olive colour, numerous, and crowded together; thus it is seen at *b*. In all these states, the surface is distinguished with numerous very minute pores, which are seen, a little magnified, at *d*. These pores are the mouths or outlets of the sphaerulae, which are lodged within the substance of the leaf. These sphaerulae are truly globular, of a beautiful glossy orange colour; containing when young a pale coloured gelly. The internal substance of the leaf is of a bright beautiful green. A particle is magnified at *e*. to shew the sphaerulae.

Grows upon calcarious rocks, in *Craven*.

A N
HISTORY OF FUNGUSSES,
GROWING about HALIFAX.

G E N U S X I.
M U C O R.

- CLXVI. MUCOR *capsula globosa*. Sp. Pl. 1655. Mich. Gen. t. 95, fig. 1. Flora. Dan. t. 467, fig. 4. Hudson Angl. 646.
mucedo.

G R E Y M O U L D.
T A B. CXXXII. F I G. I.

THIS consists of a single grey filament, crowned with a small globular grain, at first white and pellucid; afterwards becomes grey and opaque; at last bursts, like a *Lycoperdon*, and ejects numerous seeds.—Grows on putrid fruits, &c. It is magnified at *a.* and ejecting the seeds at *b.*

- CLXVII. MUCOR *stipite ramoso spicis tarnis*. Sp. Pl. 1656. Hudson Angl. 647. Mich. Gen. t. 91, fig. 3, 4.
cæspitosus.

T E R N A T E M O U L D.
T A B. CXXXII. F I G. II.

THIS grows on putrid vegetables, in woods. It consists of a filament, divided in a ternate order; the extreme divisions resembling a string of minute, white, pellucid necklaces, which, when at maturity, burst, and discharge oval seeds. Magnified it appears as at *b.*

- CLXVIII. MUCOR *racemosus*. Botrytis *spicata grisea, seminibus rotundis*. Mich. Gen. p. 212, t. 91, fig. 4.
botrytis.

G R A P E M O U L D.
T A B. CXXXII. F I G. III.

THIS is a filament, divided and subdivided in an irregular manner; the extremities of the divisions sustaining each a grape-like cluster of globular seed vessels. It grew between the imbricated lobes of a large decaying plant of *Boletus versicolor*. Magnified it appears as at *a. b.*

- CLXIX. MUCOR *stipitatus fugax, stipite capillacio, capitulo sphaerico rorido nigro punctulo in summitate notato*. Relhan Flor. Appen. planta ultima. Pluck, t. 116, fig. 7. Ray Syn. p. 13, No. 13.
roridus.

E Y E D M O U L D.
T A B. CXXXII. F I G. IV.

THIS grows in clusters, and consists of a single, upright, pellucid filament, four lines high. It is pellucid and white, sustaining a small globular head, like a minute pearly drop, with a black spot on its upper part; which give the globe the resemblance of an eye in miniature.—Grows on horse-dung, in cloudy mornings; perishes when the sun shines upon it. Found in August and September, in fields about Halifax.

Fig. 2

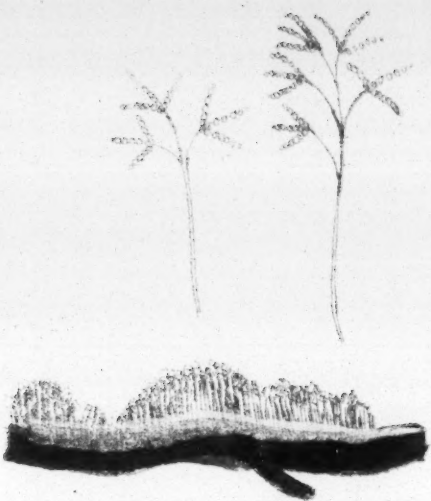


Fig. 1.



Fig. 4

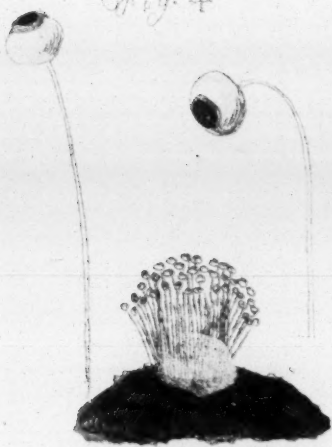


Fig. 3



Fig. 2.

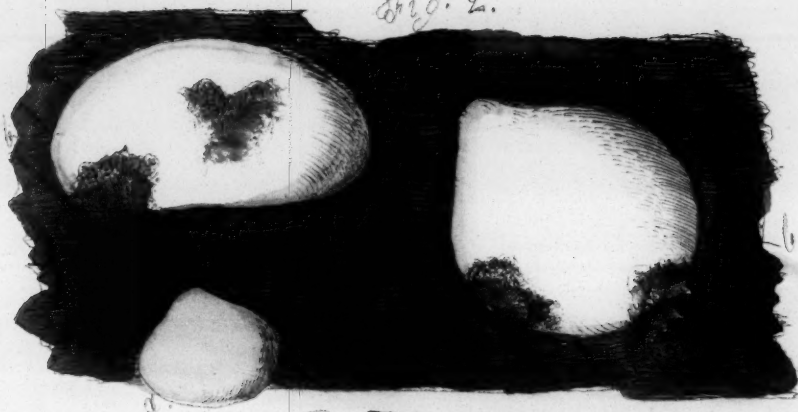
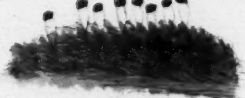
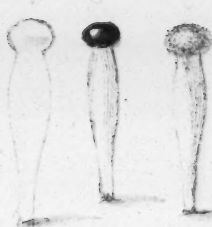


Fig. 1.



MUCOR *stipitatus fugax, stipite supern ventricoso pellucido rorrido* CLXX.
capitula subrotundo elastico nigro, Dickson, Crypt. fasc. 1, p. 25, urceolatus.
t. 3, fig. 1. Hydrogera crystallina. Wiggers Fl. Holsat. p. 100.
Relban, Flor. Append. 35, No. 1062.

PITCHER-SHAPED MUCOR.

T A B. CXXXIII. FIG. I.

THIS is about two lines in height; the stalk or ascending part is of a dusky yellowish hue, and contracted near the base, but towards the top is swelled, so as to give the stem a lengthened urn shape. This upper part is pellucid, and seems as if filled with dew. The head is globular, sometimes a little depressed, sometimes compressed; it is of a dark shining olive colour, surrounded with a membrane at first, but which breaks, and the head afterwards is of a greenish hue, and appears downy. The seeds adhere to elastic filaments, as at *a*. The natural size of the plant is seen at *b*. The head uncovered at *d*. covered at *c*. A downright section at *e*. The plant more highly magnified at *f*.

Found in horses or cows' dung, early in the morning. This figure and description was taken in October, 1784.

MUCOR *sessilis subalbidis magnis, pulvere fuscis. Lycogala griseum* CLXXI.
majus. Mich. Gen. t. 95, fig. 1. Schæf. Fung. t. 195. lycogalus.

GELLY MUCOR.

T A B. CXXXIII. FIG. II.

THE substance of the plant, while immature, is like a stiff gelly; it is of a brown colour, and enclosed in a brown soft bag or cover. It adheres to decaying wood, by a central umbilicus, but has no apparent root. As the plant advances in growth it becomes more convex, approaching to a globular figure, but compressed at the base; the cover becomes more firm and dry, and changes to a fair white, is smooth to the eye, but has a gentle asperity to the touch. When full grown it breaks, in various irregular gashes, and discharges brown globular seeds adhering to elastic filaments. *a*. the young plant; *b*. the perfect one; *c*. is a specimen cut perpendicularly; *d*. the seeds.

This grew in a brew-house in *Halifax*, on an old beam, over the pan where the worts are boild, April 21, 1788.

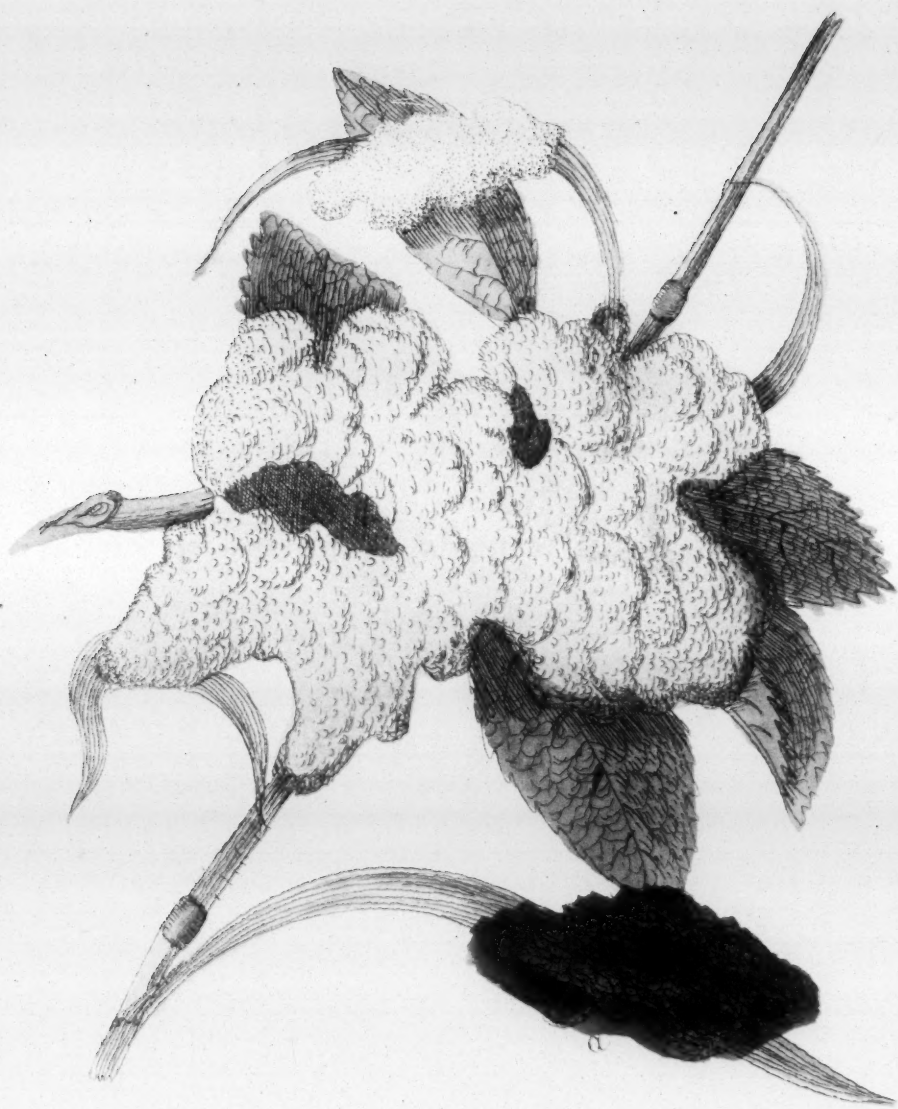
- CLXXII. MUCOR *unctuosus flavus*. Sp. Pl. 1656. Schæf. Fung. t. 194.
septicus. Mich. Gen. t. 96, fig. 2. Flor. Dan. 778. Relban, Flor.
 p. 475. No. 994. Hall. Hist. 2133. Hudson, Angl. 647.
 Lightfoot, Scot. 1073.

FROTHY MOULD.

T A B. CXXXIV.

THIS is found in patches, of various shapes and various sizes; sometimes as large as the palm of a man's hand, the surface is irregular, the margin swelled out, here and there, into uneven and unequal lobes. I have seen smaller specimens which are white, and most frequently of an oblong figure, as is expressed on the upper blade of grass in the plate. These, I suppose, are the plant in its first stage; when further grown, it is of a yellow or golden colour. In both states it is of a frothy substance, and looks not unlike Barm or Yeast; touched it dissolves in a cream-like frothy substance. In the space of a day or two it dries, and changes to a black footy powder, replete with globular seeds, adhering to black, downy, elastic filaments.

Grows in woods, on grass and other herbage near the ground, and appears not like a plant, but like matter that had been accidentally spilt there. This specimen grew on withered grass, and the low dying branch of an hedge rose, which were entangled together, in *Woodhouse-Wood*, near *Halifax*, August 3, 1782.





A P P E N D I X:

CONTAINING SUCH

PLANTS of the FUNGI ORDER,

AS HAVE BEEN

DISCOVERED since the PUBLICATION

OF THE

F O R M E R V O L U M E S.



A P P E N D I X.

A G A R I C I.

CLXXIII.

velutipes.

AGARICUS *stipitatus, fasciculatus pileo planiusculo fulvo, stipite nudo tenerrime villosa fuliginosa. Relhan, Flor. No. 942, 456. Vaill. Paris, t. 12, fig. 8, 9.*

VELVET-STALKED AGARIC.

T A B. CXXXV.

THE root is black and hard; it is furnished with black fibres, and sustains several plants.

The stem is firm, solid, the thickness of a swan's quill, often crooked or bent, and two inches high. It is white within, but on the outside of a very dark chocolate brown, inclining to black; and is covered with a very short velvety down.

The gills are in three series, few, very broad and large, pellucid, tough, and of a yellow colour. Those of the first series not adhering to the stem, but rounded off at the base.

The pileus is cushioned, glutinous; the rim deflected and acute. The colour about the centre a strong orange brown, changing to a dusky gold colour; at the margin, in decay, it turns black, and dissolves.

The specimens here figured and described, grew on the stumps of fallen trees in *Southowram*, in February, 1789.

CLXXIV. AGARICUS *ex uno pede multiplex, pileo desuper ex spadiceo fusco-pallidus. flavescente. Mich. Gen. t. 81, fig. 2.*

PALE - BROWN AGARIC.

T A B. CXXXVI.

THE root is swollen, spongy, of a soft grey brown on the outside, and white within. It emits many brown capillary fibres, and frequently sustains several plants.

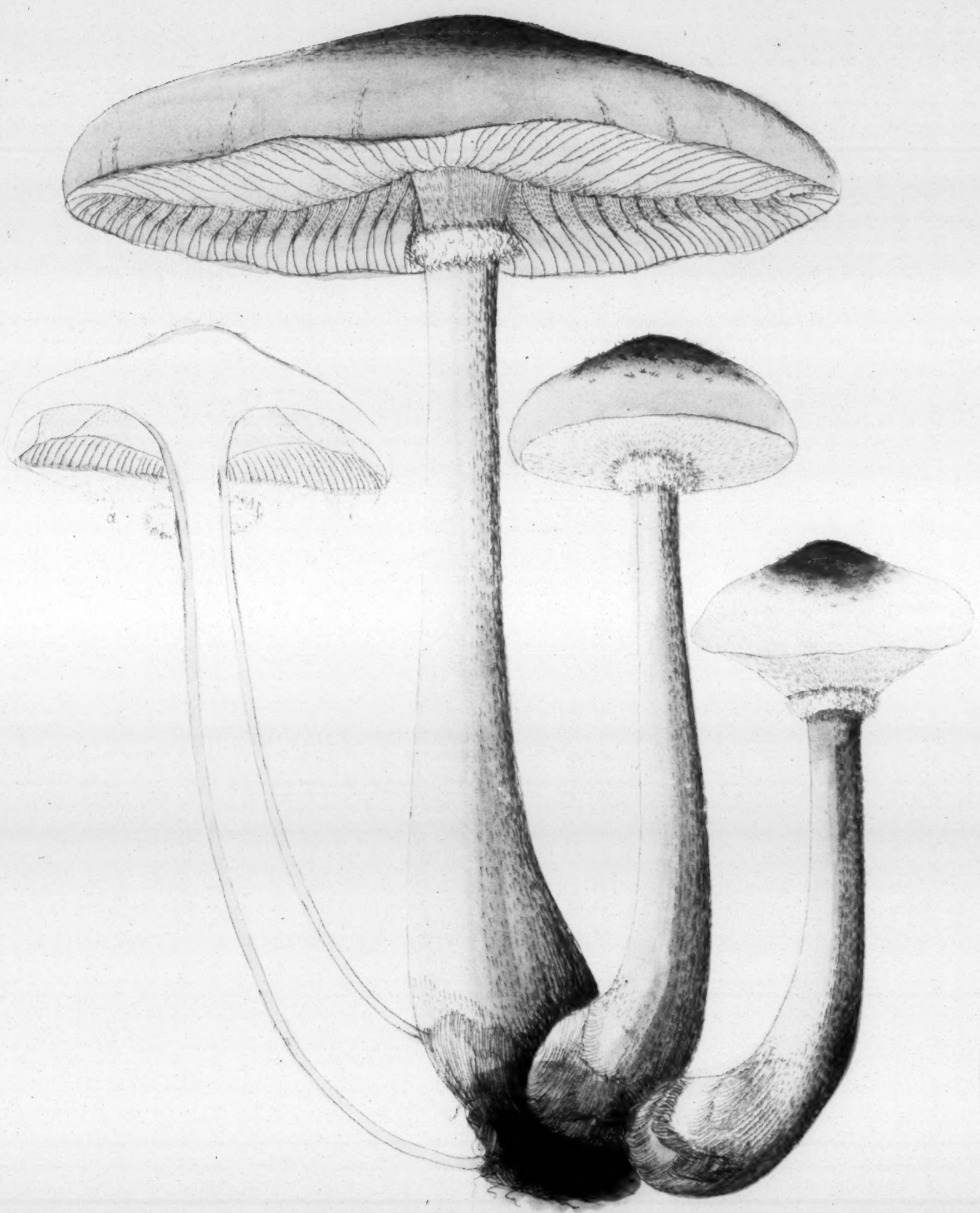
The stem is five inches high, of a pale brown-grey colour on the outside. It consists of a bark or rind, half a line in thickness; which is filled with a spongy or cottony matter, of a pure white. It is largest at the base, from whence it diminishes gradually upwards.

The curtain is white, of a soft downy substance, and soon vanishes. It originates in a thick soft annulus, which abides on the stem till the decay of the plant.

The gills are arranged in three series; they are narrow, arched, thin, flexible, and white.

The pileus while young is convex, afterwards nearly flat; the surface vellumy, but with a few small scales at the summit, in some of the younger plants; the rim deflected; the colour a pale dusky brown; the flesh is white, soft, and spongy.

Grows in woods about *Halifax*, but is rare.





AGARICUS *stipitatus, pileo margine albido, apicibus nigrus,* CLXXXV.
stipite fistuloso basi plumoso. atro-albus.

BLACK AND WHITE AGARIC.

T A B. CXXXVII.

THE first appearance of this Agaric, is a tuft or little plume of white feathery bodies, of a very light and delicate substance, issuing from a round, fibrous, brown root. From the centre of this plume arise the pileus and stem; the last of which is thereby surrounded, at its base, till the decay of the plant.

The stem is fistular, round, and smooth; at first of a dusky hue, approaching to black; as it advances in growth the upper part becomes gradually paler; and in a full grown plant the upper part is white. The height is about three inches; the substance easily splits in filaments.

The gills are arranged in three series; those of the third often very small, and sometimes deficient in number. They are white, flexible, arched, and those of the first series are inserted into the top of the stem, by a broad obtuse claw.

The pileus at first is of an oblong form, at last becomes bell-shaped. In the first stage it is black, except the margin, which is white; and, in the advance of growth, the white of the margin is extended up to the middle of the pileus, the upper part remaining black to the last.

Grows amongst moss about the roots of trees, in woods about *Halifax*, but rarely.

B O L E T I.

CLXXVI. BOLETUS.

Agaricus ramosus cornu reniferi referens. Blacks. Spec. Bot. p. 2, t. 1. *Clavaria*,
rengiferinus. *hypoxylon* var. B. Hudson, Angl. 639.

RAIN - DEER BOLETUS.

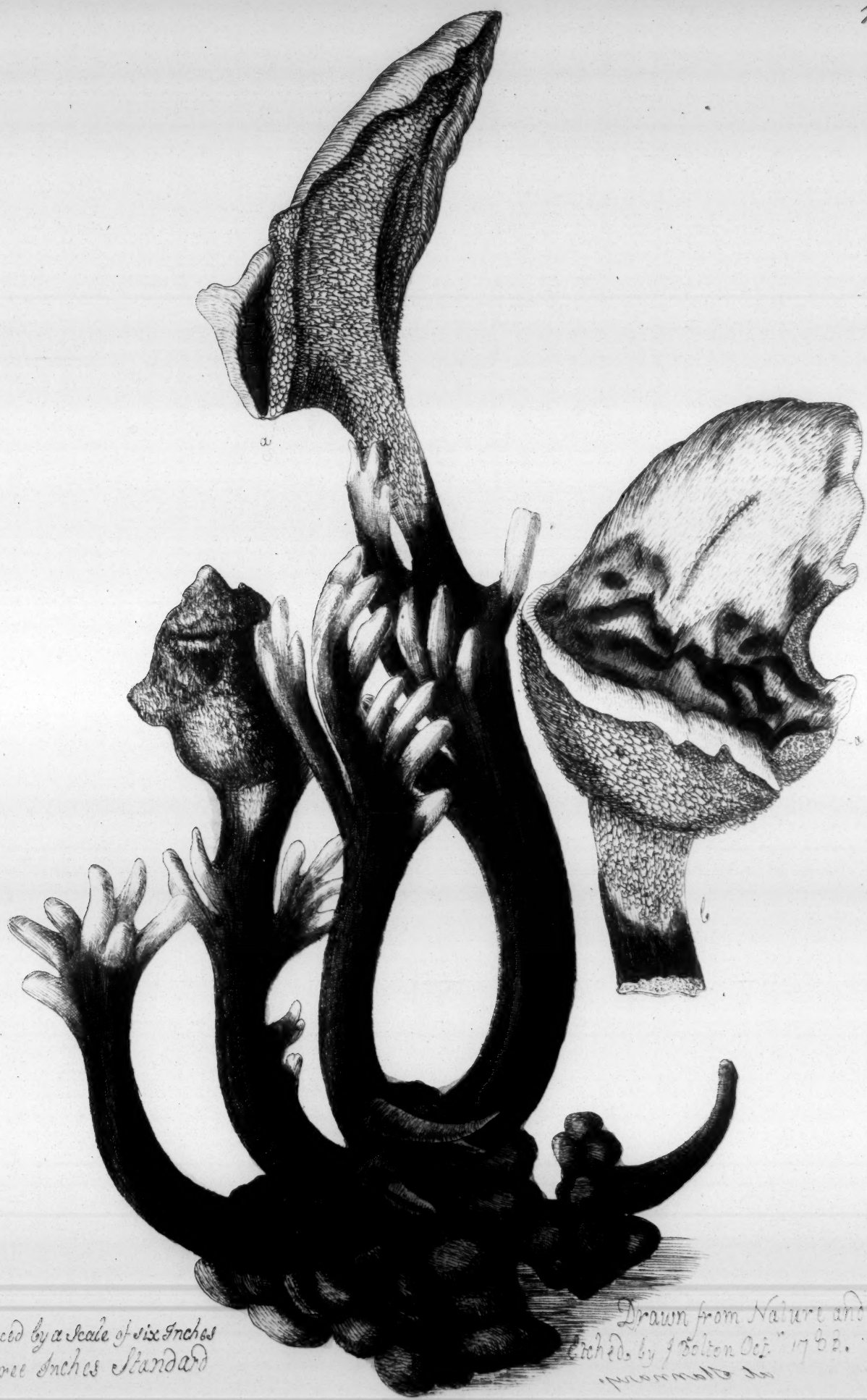
T A B. CXXXVIII.

IT has a base or pedestal, consisting of brown fungous tubercles, the size of hazel nuts, adhering together by their sides, and forming an irregular knotty surface on the upper side; on the under side, where it adhered to the wood, it is smooth and a little hollow. The general shape of the base is roundish; but on one side is an additional piece of the same substance, adhering to the rest by a narrow neck, producing a single horn, which is curved, and throughout of the general sooty colour of the plant.

From near the centre of the base arises, singly, the principal stem; it emits near its bottom; a small horn growing horizontally, but curving upwards at the point. The stem above emits two branches, which diverge very little from its direction, as it were embracing it their whole length. These branches terminate in fingered divisions, which are of a pale ochre colour. At the height where these branches terminate, the stem emits a single compressed horn, an inch long, the upper part ochre coloured. About three inches above this, the stem begins to spread out, and forms itself into a large open expansion, rudely resembling a spatha of the *Calla Indica*, but is broader at both extremities; the margins are rolled back, and gently waved and laciniated; on the upper side, near the middle of the expansion, is a projecting line, which seems to consist of a wrinkled membrane, hard and dry; on the under side, all round, the margin is of a pale ochre colour, and full of angular pores, which have no proper tubes; all the rest of the under side is beset with tubes, placed in an oblique direction, their mouths torn and laciniated, but their lower parts cylindrical. These tubes are largest in the centre, diminishing gradually towards each side, and they run a little way down the stem, below the base of the spatha, the whole of which is of a pale yellow or ochre colour, except a few clouds and shades of a dusky brown, on the upper surface. A side view is seen at *a*. a front view at *b*.

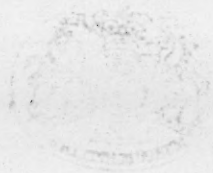
Besides this branch, the base produces three others; one, which is the innermost, is nearly upright; the other two grow at first horizontally, and then curve gradually upwards. The first of these has three principal divisions, each of which is subdivided into three or four white fingers. Another of the three emits branches from its sides, and sustains, at top, a lump or ball, of a fungous substance, rudely resembling a human head; and in the direction that I placed the plant, to take its figure, this head was in profile: On the neck is a yellow triangular spot. The other branch is the shortest, and terminates in seven white fingers.

The colour of the bark is a dark fuscous brown, with a cast of soot; the surface in some parts marked with longitudinal furrows, in others reticulated with rising wrinkles; the internal substance white, dry, and elastic. The height of the plant, when fresh, near fourteen inches; my figure is reduced by a scale of twelve inches, on six inches standard. A sight of this curious Fungus was procured me by Mr. THORSEY, of Leeds. It grew on an old log of wood in a cellar, in that town. A. D. 1788.



Reduced by a scale of six Inches
On three Inches Standard

Drawn from Nature and
Engraved by J. Bolton Oct. 17 52.
J. Bolton del.



ENGLISH TRIVIAL NAMES

IN THE

LAST VOLUME.

CLATHRUS.

	Page.
G REY	94
Naked	93
Olive	94
Purple	93
Scarlet	93
Turbinated	94

HALVELLA.

Agaric-shaped	98
Battledore	97
Gristly	101
Golden	98
Hispid	96
Mitred	95
Purple	101
Scarlet	100
Wreathed	99

PEZIZA.

Bended	106
Blue	108
Brown	109
Ciliated	108
Cornucopia	103
Eared	107
Green	109
Lentil	102
Scarlet	104
Striated	102
Trumpet	106
Waved	105
Yellowish	105

CLAVARIA.

Black	111
Bundled	112
Club	110
Coral	113

Page.

Dwarf	114
Elegant	115
Slender	111
Twisted	112

LYCOPERDON.

Globe	118
Red	119
Subterraneous	118
Variable	117

SPHÆRIA.

Agaric-shaped	130
Blood-coloured	121
Cabbage	119
Covered	125
Depressed	122
Fingered	129
Furrowed	124
Green	121
Gunpowder	122
Leafy	131
Loped	127
Military	128
Mulberry	120
Pierced	126
Pink-coloured	127
Rough	123
Sea-Green	120
Tuberculous	123

MUCOR.

Common-Grey	132
Grape	132
Eyed	132
Pitcher-shaped	133
Ternate	132
Yellow	134
Gelly	133

NOMINA TRIVIALIA.



AGARICUS.

	Page.		Page.
A CRIS	60	Elephantinus	28
Adscendens	55	Equestris	65
Amethystinus	63	Extinctorius	24
Androsaceus	32	Farinaceus	64
Annulatus	23	Fascicularis	29
Aquosus	71	Fimbriatus	61
Atro-albus	137	Fimetarius	44
Atro-rufus	51	Fissus	35
Betulinus	72	Flabellatus	72
Campestris	45	Fulvus	56
Candidus	39	Fusco-pallidus	136
Campanulatus	31	Infundibuliformis	34
Castaneus	10	Integer	1
Ceruleus	12	Irregularis	13
Cespitosus	41	Laceratus	68
Chantarellus	62	Lactifluus	3
Ciliaris	53	Laricinus	19
Cinnamomeus	22	Lateralis	71
Clypiatus	57	Latus	2
Clavus	39	Luridus	25
Confertis	18	Luteo-albus	38
Cornucopioides	8	Luteus	50
Concinneus	15	Mammofus	62
Cuspidatus	66	Membranaceus	11
Croceus	51	Mollis	40
Cristatus	7	Muscarius	27
Deliciosus	9	Nobilis	46
Denticulatus	4	Nuceus	70
Domesticus	26	Peronatus	58
Durus	67	Piperatus	21
Eburneus	4	Planus	72
Elasticus	16	Plumofus	33
		Politus	30

NOMINA TRIVIALIA.

	Page.
Pompatus	5
Procerus	37
Purpureus	41
Pulchellus	20
Pulvinatus	49
Quercinus	73
Radiatus	39
Repandus	6
Rigidus	43
Rubeus	36
Serratus	14
Sordidus	59
Striatus	54
Tortilis	41
Trilobus	38
Varius	66
Vernalis	48
Velutipes	135
Verrucosus	47
Villosus	42
Violaceus	52
Umbelliferus	39
Umbilicatus	17

BOLETUS.

Albus	78
Auriformis	82
Bovinus	85
Elegans	76
Hepaticus	79
Igniarius	80
Lateralis	83
Luteus	84
Obliquus	74
Procerus	86
Rangiferinus	138
Squamosus	77
Subtomentosus	87
Tenax	74
Verficolar	81

HYDNUM.

Auriscalpum	90
Imbricatum	88
Repandum	89

PHALLUS.

	Page.
Esculentus	91
Impudicus	92

CLATHRUS.

Denudatus	93
Flavus	94
Fulvus	93
Nudus	93
Olivaceus	94
Sphærocephalus	94
Turbinatus	94

HALVELLA.

Agariciformia	98
Aurea	98
Cartilegenia	101
Coccinea	100
Cochleata	99
Feritoria	97
Hispida	96
Mitra	95
Sarcoides	101

PEZIZA.

Auricula	107
Coccinea	104
Cærulea	108
Cornucopioides	103
Fusca	109
Inflata	106
Lentifera	102
Ochreolucæ	105
Scutellata	108
Striata	102
Tuba	106
Undulata	105
Viridis	109

NOMINA TRIVIALIA.

CLAVARIA.

	Page.
Coralloides	113
Elegans	115
Fastigiata	112
Gracilis	111
Gyrans	112
Muscoides	114
Ophioglossoides	111
Pistularis	110

LYCOPERDON.

Bovista	117
Cervinum	116
Epidendrum	119
Globofum	118

SPHÆRIA.

Agariciformia	130
Bombardica	122
Brassicæ	119
Digitata	129

	Page.
Depressa	122
Foliacea	131
Glaucia	121
Militaris	128
Miniata	127
Mori	120
Obducta	125
Pertusa	126
Rugosa	123
Sanguinea	121
Sulcata	124
Truncata	127
Tubercula	123
Viridis	121

MUCOR.

Botrytis	132
Cespitosus	132
Lycogalus	133
Mucedo	132
Roridus	132
Septicus	134
Urceolatus	133



